READ PERSPECTIVES

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INSIDE:

The Languages of the United States: What Is Spoken and What It Means
– *Barry R. Chiswick*
– *Paul W. Miller*

Getting it Right: The Seattle School District Program for Limited-English Proficient Students
– *Scott K. Baker*

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READ PERSPECTIVES

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Rosalie Pedalino Porter, Ed.D., The Read Institute
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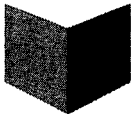

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INTRODUCTION

The current issue of *READ Perspectives* features two studies of central importance in the consideration of language education policy in the U.S.: an analysis of the ways in which the degree of fluency in the common language of a country impacts upon economic success, and a descriptive report of a successful urban program in a school district with a very high enrollment of limited-English students.

The first article in this volume is a research report by Professor Barry Chiswick, head of the Economics Department at the University of Illinois at Chicago, and Professor Paul Miller of the University of Western Australia. They analyze the wealth of data collected in the 1990 Census of Population of the United States in order to provide a statistical account of language usage in the U.S., focusing on these main questions: To what extent are languages other than English spoken in the U.S.? What are these languages and who speaks them, i.e., by age, ethnic group, education level, place of birth, geographic concentration, and other factors? What are the English language skills among those who speak another language? And, most importantly, what are the social and economic consequences of using other languages?

Professors Chiswick and Miller conclude that "the lack of proficiency in English can impede the social, economic and political adjustment to American society and promote an inward-looking perspective that contributes to the growth of ethnic ghettos based on language use." The authors report that immigrants in the United States who are not proficient in English have earnings around 16 percent lower than do immigrants who are proficient in English, other things being equal. This figure has barely changed since the authors reported a 17 percent difference in earnings when they analyzed the 1980 census data. Conversely, there is also a documented improvement in the opportunities for full-time work and for working a higher number of days per year for immigrants with fluency in the national language.

Reflecting the patterns of heaviest immigration flows, Spanish speakers make up 55 percent of those who speak a language other than English at home, followed by small percentages of dozens of European, Asian and Native American Indian languages. Spanish speakers, as a group, differ from other immigrants and migrants in being younger, having a lower level of schooling, and possessing less English language fluency. English fluency is greater for foreign language speakers who are native born, who speak a language

other than Spanish, who have a higher level of education and, if foreign born, who have lived in the U.S. a longer period of time and are U.S. citizens.

There are serious implications for U.S. education policy in the Chiswick-Miller conclusions. The most widely used education program for Spanish speakers, with its focus on years of native language instruction and a minimum of English language use in the classroom, is not producing the results anticipated when the first Bilingual Education Act was passed by the U.S. Congress in 1968. English language fluency was the primary goal—the medium for access to an equal education and to the integration of limited-English students into mainstream classrooms.

Twenty-eight years later, Spanish-speaking students who enter school without a sufficient command of English are still not achieving success in learning English in a reasonably short time, nor are they, as a group, demonstrating academic success in learning their school subjects—both goals clearly put forth as crucial for these students. Spanish-speaking students are dropping out of school before completing their high school courses in unacceptably high percentages. For example, the Los Angeles Unified School District reported that for the 1993-94 school year the high school dropout rate for Latino students was 44.4 percent (compared to a state-wide average of 20 percent), and that three-fourths of these students were enrolled in bilingual classes in the district.

More than any other single group of limited-English students, Spanish speakers are denied the opportunities available to them as adults for skilled work or higher education if they are unable to finish high school with an adequate command of English. Bilingualism can lead to better paid positions in labor market settings where more than one language is used regularly, but having only an imperfect command of English does not lead to success in the real world of work or school in the U.S. Education policy in the states with the largest concentrations of limited-English students of Spanish-speaking background—California, Texas, New York, Florida, Illinois, and New Jersey—needs urgently to revise the emphasis on native language programs that have consistently failed this group of students.

In the continuing series published by the READ Institute featuring exemplary programs for language minority children, Professor Scott Baker of the University of Oregon provides a descriptive study of the Seattle School District's programs for 6,300 limited-English students who represent 78 different language backgrounds. Baker begins with a brief review of the lawsuit brought against the Seattle School District in 1993 on behalf of a dozen language minority students, which was favorably settled out of court by the

district (see *READ Perspectives* III-1: 36–39). He then describes in detail the unusual features of the Seattle efforts to promote early and effective English language learning and academic achievement.

Given its geographical location in the Pacific northwest, it is to be expected that most (65 percent) of the limited-English students in the Seattle schools are from Asian countries. The major languages represented in this group are Vietnamese, Chinese dialects, Pilipino dialects, and Khmer. Part of the reason for investigating the Seattle programs for limited-English students is to dispel the prevailing mind-set among educators that "bilingual means Spanish." There are, in fact, approximately one million students of limited-English proficiency (LEP) in U.S. schools whose first language is *not* Spanish, and thus it is useful to see the variety of approaches being used to educate these students.

Baker examines the most current Seattle documents charting student progress, staff competencies, instructional approaches, testing, demographics, high school graduation and dropout statistics. There is also data on staff, student and parent surveys that were administered by an outside consultant (Puget Sound Educational Service District, 1995) to determine the various perceptions of the district programs.

Some program features that are particular to the district are given full descriptions. These include the team-teaching "blended model" that gives limited-English students special help in a mainstream classroom setting—the trial exit procedure for students whom district personnel believe will perform successfully in the mainstream even though they have not yet scored above the 35th percentile on reading and languages tests; and the Bilingual Orientation Centers that focus on English language and literacy development for middle and high school students who arrive in Seattle with little or no formal schooling in any language.

Most important of all, Baker compares the performance on reading, language and math tests of three groups: native speakers of English, LEP students who have been enrolled in special English language learning programs, and LEP students who have not received special services. Comparing the achievement of limited-English students to that of their English-speaking peers is the ultimate test of whether a special program is helping the LEP students or not, and it is the kind of accountability that is too often lacking in this field.

The conclusions drawn by Professor Baker after his exhaustive analysis of the data will be of particular interest to educators and policy-makers across the country:

- LEP students in Seattle who have been enrolled in one of the special English language programs and have successfully exited that program in fewer than 5 years made significant achievement gains in all major subject areas, including reading, language and math, comparable to district averages.
- Students who have remained in the special programs more than 5 years show a considerable rate of decrease in progress.
- LEP students in the English language programs have a considerably lower dropout rate than the rest of the district.
- High school graduation rates for students who have successfully exited from the special language programs are on a par with other students in the district.

It is immediately apparent from these reported and carefully documented results that Seattle's programs are doing what is absolutely essential for its limited-English students—giving them mastery of the English language for academic success and high school completion. It is useful to contrast this with the recent report in the *New York Times* (June 19, 1996: B-6) that the Los Angeles school district is offering a financial bonus to its schools for each additional LEP student who is exited to a mainstream classroom. Los Angeles reports such poor results with its native language instruction program that, even after 5 to 7 years in bilingual classrooms, only 5 percent of the students are considered ready to exit to the mainstream.

Two central lessons may be learned from this issue of *READ Perspectives* for improving the schooling of language minority children:

1. The early acquisition of well-developed English language skills will be one of the greatest aids to their future academic and economic success and upward social mobility in American society.
2. Seattle shows that it is possible to educate LEP students to a level that is comparable to their English-speaking peers *without* resorting to a separate (and inherently unequal and segregative) native language instruction program. Seattle also shows us how.

Rosalie Pedalino Porter, Editor
READ Perspectives

The Languages of the United States: What is Spoken and What it Means

Barry R. Chiswick and Paul W. Miller

With the end of the mass immigration to the United States in the 1920s and with the passing of the immigrant generation, the people of the United States came to think of themselves as linguistically homogenous, viewing those who spoke a language other than English as marginal to society and the economy or as in a transitional status. Navaho Indians and Mexican-Americans in the Southwest, and the Amish in rural areas in Pennsylvania were among the numerically small groups that "held on to" their languages of origin. They and others like them were viewed, if they were thought of at all, as "quaint" or "backwards" and as peripheral to the mainstream. Immigrants from countries in which a language other than English was spoken might well retain their mother tongue, but this was viewed as an "immigrant generation" phenomenon, and the immigrants, and most certainly their children born in the U.S., were expected to become fully fluent in English and to abandon their origin language.

With the enactment of the 1965 Immigration Amendments and other developments in the U.S. and abroad, rates of immigration to the United States have increased sharply, and the source countries have changed. Whereas, previously, most immigrants came from Europe and Canada, now most come from Latin America and Asia. (Chiswick and Sullivan, 1995) One of the consequences has been an increasing number and share in the population of individuals who are less than fully fluent in English.

As a result, a new view of language has emerged. The consensus that the United States is, and should be, a fundamentally English-language country has been challenged in social, political, economic and judicial arenas. Efforts to promote English as the "official" language of the United States have arisen in response to practices and policies aimed at institutionalizing the use of languages other than English. The operational implications of legislation or of a Constitutional Amendment to make English the official language, or the legal language of government, are unclear. The symbolic implications, however, are important to both sides of the debate.

There is, unfortunately, much emotion but little information regarding language usage in the United States. To what extent are languages other than English spoken in the U.S.? What are these languages? Who speaks them? And what, if any, are the consequences of using other languages? What are the prospects for continued growth in the foreign-language-speaking population of the country? Moreover, what are the English language skills among those who speak another language?

This article provides answers to these questions. We are not so naive as to believe that these answers will resolve the political conflict. We are hopeful, however, that this article can raise the level of the political debate and that resolutions will come easier when the basic facts are known.

The 1990 Census of Population of the United States is the primary data source in this study. It is the most recent source of a wealth of data on the languages spoken by the U.S. population. Respondents (aged 5 and over) who completed the "long form" questionnaire were asked if they spoke a language

Table 1
Population Speaking a Language other than English at Home by Place of Birth and Citizenship, Persons Aged 5 and Over, 1990 U.S. Census (percent)

	Place of Birth				Citizenship Status[c]	
	Native Born[a]	Born in US Territories[b]	Foreign Born	Total	Citizen	Not Citizen
Percent of U.S. Population	90.9	0.6	8.5	100.0	94.6	5.4
Percent Speaking:						
Only English at Home	92.7	13.5	20.9	86.2	90.3	15.5
A Language other than English	7.3	86.5	79.1	13.8	9.7	84.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Notes: [a] Born in one of the 50 States or the District of Columbia (includes those born abroad of American parents); [b] Of these, 86.7% were born in Puerto Rico and the remaining 13.3% in other U.S. territories in the Caribbean and the Pacific; [c] Persons aged 18 and older by whether they are citizens of the United States. (Unless specified otherwise, the data source for all of the statistical tables is the U.S. Bureau of the Census, *1990 Census of Population, Public Use Microdata File*, 1% sample.)

English at home, other than just a few words or phrases. If they did, they were asked to identify that language. Moreover, if they spoke a foreign language at home, they were also asked if they spoke English "Very Well," "Well," "Not Well" or "Not at All." (See Appendix for the 1990 Census questions on language usage.) The responses by individuals to these questions in the 1990 Census, as well as to the myriad questions on the demographic, sociological and economic characteristics of the population, have been put in a computer data file (microdata) that serves as the basis for the analyses reported in this study.

It should be of little surprise to be told that many individuals in the United States speak a language other than English at home, and that the extent of this practice depends on the birthplace of the individual. What may be a surprise, however, is the extent of the use of languages other than English among the various birthplace groups. Table 1 provides relevant information. It divides the U.S. population, aged 5 or more years, into three groups: the native born (defined as individuals born in the U.S. or born abroad of American parents), those born in Puerto Rico or another U.S. territory, and foreign born individuals. It also provides a further sub-division of the population aged 18 or more years, the voting age population, by whether or not they are U.S. citizens.

Fourteen percent of the U.S. population speaks a language other than English at home. While only 7 percent of those born in the U.S. fall into this category, 87 percent of those born in a U.S. territory and 79 percent of the foreign born reported speaking a language other than English (Table 1).

Nearly 95 percent of residents aged 18 or older are citizens of the United States (Table 1). Among these, 90 percent speak only English at home. Among the 5 percent of the U.S. population who are not citizens, however, only 16 percent speak only English at home.

If speaking a language other than English is of import in American society, then the data in Table 1 indicate that the issue may be of major significance. Those who speak a language other than English at home may be part of an advantaged group in American society who are bilingual and multicultural, or part of a cultural elite, who reap rewards associated with this status. There have been a number of studies that have established that bilingualism can lead to higher paying positions in labor market settings where more than one language is used regularly. Analyses of the 1981 Census of Canada reported in Chiswick and Miller (1988), for example, show that English-French bilinguals are among the highest paid in Canada, where English and French are official languages.

Speaking a language other than English at home may, however, be indicative of circumstances that disadvantage the individual. These circumstances include a lack of proficiency in English that impedes the social, economic and political adjustment of the person in American society, and an inward-looking perspective that promotes the growth of ethnic ghettos based on language use. A study of the 1980 U.S. Census by Chiswick and Miller (1992), for example, shows that, other factors being equal, immigrants in the United States who are not proficient in English have earnings approximately 17 percent lower than do immigrants who are proficient in English.

It is important, therefore, to understand the characteristics of the 14 percent of the U.S. population who speak a language other than English in order to determine why they are in such a group, and to assess the extent of any advantage or disadvantage associated with membership in a particular language group.

THE DISTRIBUTION OF LANGUAGE SKILLS

If a person spoke a language other than English at home, that individual was asked by the 1990 Census to identify the language. If the person spoke more than one language other than English, the person was to report the language spoken more often or the language learned first. Table 2 presents summary statistics on the relative frequency of the 25 languages most often cited. The 8 most frequently cited languages are Spanish, French, German, Italian, Chinese, Tagalog, Polish, and Korean, reflecting Latin American, European and Asian origins.

The most obvious feature of Table 2 is the dominance of Spanish: over one-half of individuals who speak a language other than English in the home speak Spanish. This is close to 100 percent for those born in the U.S. territories, reflecting the presence of individuals born in Puerto Rico in this category. Of the native born who speak a language other than English in the home, 58 percent speak Spanish, compared to 48 percent of the foreign born.

Three European languages, French, German and Italian, are next in terms of frequency, and these are spoken by 5.3, 4.9 and 4.1 percent of the group of second language speakers, respectively. Several Asian languages have a high representation, namely Chinese (3.9 percent), Korean (2.0 percent), Vietnamese (1.6 percent), and Japanese (1.3 percent). It is also noteworthy that the Navaho language ranks twenty-third and is as important as all other American Indian (i.e., Native American) languages combined.[1]

There are some differences between the native born and foreign born in terms of the frequency of languages other than Spanish. Chinese, for example, is

Table 2
Languages other than English Spoken at Home, Persons Aged 5 and Over by Place of Birth, 1990 US Census (percent)

Language	Native Born	US Terr	Foreign Born	U.S. Population	Language	Native Born	US Terr	Foreign Born	U.S. Population
Spanish	58.4	96.9	47.6	54.6	Yiddish	1.0	0.0	0.5	0.7
French	8.5	0.4	2.5	5.3	Thai	0.2	0.0	1.1	0.6
German	6.6	0.0	3.5	4.9	Persian	0.2	0.0	1.1	0.6
Italian	5.3	0.1	3.2	4.1	French Creole	0.3	0.0	0.9	0.6
Chinese	1.4	0.0	6.6	3.9	Armenian	0.3	0.0	0.8	0.5
Tagalog	0.6	0.1	4.7	2.6	Hebrew	0.5	0.0	0.5	0.5
Polish	2.9	0.0	1.8	2.2	Dutch	0.4	0.0	0.6	0.5
Korean	0.6	0.0	3.5	2.0	Navaho	0.9	0.0	0.0	0.5
Vietnamese	0.5	0.1	2.9	1.6	Hungarian	0.4	0.0	0.6	0.5
Japanese	1.2	0.1	1.5	1.3	Mon-Khmer	0.1	0.0	0.8	0.4
Portuguese	0.9	0.1	1.8	1.3	Other Amer. Indian[a]	1.3	0.0	0.1	0.6
Greek	1.3	0.0	1.2	1.2	Other Languages[b]	5.0	2.1	7.5	6.1
Arabic	0.6	0.0	1.6	1.1	Total	100.0	100.0	100.0	100.0
Hindi	0.3	0.0	1.9	1.1	Number ('000)	15244.7	1149.4	15391.0	31785.1
Russian	0.4	0.0	1.2	0.8	Nativity Group (%)	48.0	3.6	48.4	100.0

Notes: [a] = Includes the languages of Alaskan Natives and Latin American indigenous peoples; [b] = Includes specific languages not reported. 0.0 means less than one-twentieth of one percent.

the sixth most frequent language among the native born, but the second most frequent language among the foreign born. French is the second most frequent language among the native born, but only the eighth most frequent language among the foreign born. These opposing trends presumably reflect changes in immigration over the century, with recent decades having witnessed a pronounced shift away from European and Canadian origins in favor of predominantly Asian and Latin American origins. The changes in the source countries of immigration flows and the implications of these changes for the United States population and labor market are documented in Chiswick and Sullivan (1995).

Data on the distribution of various language groups by age and state of residence are presented in Table 3.[2] This table disaggregates the information on the basis of nativity and language group. The Spanish language was found to be so dominant in Table 2 that it is analyzed separately from all other languages.

The main feature of Table 3 concerns the age distribution of the native born. It is apparent that those in the Spanish language group have a greater relative frequency among the 5- to 17-year-old age group than do either the native born in other language groups or the U.S. population in general: hence, whereas only 22.3 percent of the native born who speak a language other than English or Spanish at home were aged 5 to 17, 35.7 percent of the native born who speak Spanish at home are between the ages of 5 and 17. In comparison, 20 percent of the total U.S. population is aged 5 to 17 years. Spanish, therefore, is a language currently used by many youths at home. These are the U.S.-born children of Hispanic immigrants whose numbers have increased in the past few decades, and their presence assures the continued use of Spanish in the U.S. In comparison, the other languages are less prevalent among the native born young, and their long-term position in the U.S. is not as strong as is that of Spanish. The immigrant groups who speak languages other than English and Spanish at home are older than the U.S. population in general, a discrepancy that reflects their longer duration of residence and the greater likelihood of having migrated without young children.

There is an intense geographic concentration of foreign language speakers. More than half of the native-born Spanish speakers are located in just two states, California and Texas, although these states account for only 19 percent of the total U.S. population. Moreover, almost three-fourths of native-born Spanish speakers are to be found in only six states: California, Texas, New York, Florida, Illinois and New Jersey. These six states contain 40 percent of the native born who speak a language other than English or Spanish at home

Table 3
Age and State of Residence of Persons Aged 5 and Over Speaking a Language other than English at Home, by Spanish/Non-Spanish Language and by Nativity, 1990 US Census

	Native Born		US Territories		Foreign Born		US[a] Population
	Spanish	Other	Spanish	Other	Spanish	Other	
Age							
5–17	35.7	22.3	11.5	16.7	11.9	9.1	19.6
18–24	15.3	10.8	10.3	13.8	16.8	9.7	11.4
25–64	43.9	42.4	68.8	62.9	64.6	66.2	55.4
65+	5.1	24.5	9.4	6.6	6.7	15.0	13.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
State							
California	25.3	11.6	3.5	42.1	43.4	29.7	11.9
Texas	26.9	3.4	1.9	4.4	13.9	3.6	6.7
New York	7.8	11.9	38.6	5.9	9.7	16.2	7.2
Florida	5.2	4.2	11.3	6.4	11.9	4.5	5.3
Illinois	3.6	4.9	5.1	0.5	4.6	5.7	4.5
New Jersey	2.4	4.5	12.1	0.6	3.7	6.0	3.1
Other States	28.7	59.6	27.5	40.1	12.6	34.4	61.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number ('000)	8,903.5	6,341.1	1,113.7	35.7	7,333.6	8,057.4	229,867.3

Note: [a] U.S. Population refers to all persons aged 5 and over, including those who speak only English at home.

and around 40 percent of the total U.S. population. Hence, the geographic concentration of speakers of languages other than Spanish is less intense than is the case for Spanish speakers.

Among those born in U.S. territories, primarily Puerto Rico, almost 40 percent reside in New York State, with Florida and New Jersey being other major locations for this group.

Among the foreign born who speak Spanish at home, 43 percent are located in California, 14 percent in Texas and 12 percent in Florida. Fully 87 percent of the foreign born who speak Spanish at home reside in the six states identified in Table 3. On the other hand, 66 percent of immigrants who speak a

Table 4
English Language Fluency among Persons Aged 5 and Over Speaking a Language other than English at Home, by Spanish/Non-Spanish Language and by Nativity and Citizenship, 1990 US Census
(Percent)

	Place of Birth						U.S. Citizenship Status			
	Native Born		US Territories		Foreign Born		Citizen[a]		Non-citizen[b]	
	Spanish	Other	Spanish	Other	Spanish	Other	Spanish	Other	Spanish	Other
Speaks English (%)										
Very Well	70.8	75.1	46.7	73.1	30.3	49.3	64.1	68.4	22.6	41.1
Well	19.1	17.1	27.2	20.7	24.4	30.0	20.6	22.7	22.6	29.0
Not Well	8.9	7.4	18.9	5.7	27.9	16.4	12.1	8.4	32.2	22.0
Not at All	1.1	0.5	7.1	0.6	17.4	4.3	3.3	0.6	22.6	8.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Nativity/Language Or Citizenship Group (%)	28.0	19.9	3.5	0.1	23.1	25.3	33.4	33.4	18.3	14.8
Number ('000)	8,903.5	6,341.1	1,113.7	35.7	7,333.6	8,057.4	8,506.0	8,505.9	4,667.5	3,778.3

Notes: [a] = Persons aged 18 and older who are citizens of the United States; [b] = Persons aged 18 and older who are not citizens of the United States.

anguage other than English or Spanish at home reside in these states. Cali-
ornia and New York are most important in this regard. These data point to a
eographic concentration of immigrants who speak a language other than
nglish or Spanish, as well as to a pronounced concentration of all Spanish-
peaking nativity groups.

)ne of the paramount factors in regard to the economic well-being of indi-
iduals who speak a language other than English is whether they are also
luent in English. Indeed, it will be shown that fluency in English is a key to
conomic success in the U.S. Bilingualism may enhance economic opportu-
ities, whereas monolingualism in a language other than English may retard
pportunities. Table 4 provides information on English language fluency
mong persons aged 5 and over who speak a language other than English at
ome. Data are not available on the English language fluency of those who
peak only English at home. Again, this information is disaggregated by Span-
sh/non-Spanish language and by nativity. Information is also presented sepa-
ately for citizens and noncitizens.

Among the native born, there are minor differences between the Spanish lan-
guage group and other language groups. Thus, around 90 percent of the na-
ive born who speak a language other than English at home speak English
ither "very well" or "well." Seven to 9 percent of the group speak English
'not well," and 1 percent or less do not speak English or speak it very poorly.
Jote, however, that monolingual English speakers are excluded from this
able, and the data presented in Table 1 revealed that 93 percent of the native
orn speak only English at home. When monolingual English speakers are
ncluded, the rate of English language fluency among the native born rises to
9 percent, where fluency is defined as speaking only English or, where a
anguage other than English is spoken at home, being able to speak English
ither "very well" or "well."

Among the respondents from the U.S. territories and the foreign born, it is
pparent that there are some noteworthy differences between the Spanish
nd other language groups. Consider the foreign born: here only 55 percent
of the Spanish language group are fluent in English, compared to almost 80
ercent of the other language groups. Or to put this another way, 45 percent
f the Spanish group lack English language fluency, as do only 20 percent of
he other language groups. Moreover, 17 percent of the group who speak Span-
sh at home reported that they could not speak English at all, compared to
nly 4 percent of the non-Spanish group of non-English language speakers.
While this table does not include individuals who speak only English, taking
ccount of this group results in the finding that 26 percent of the foreign born

are not fluent in English. The lack of English language skills among so many immigrants may constitute a major impediment to the economic progress of immigrants in the U.S. labor market (see below).

Language skills vary according to citizenship, and there are differences between the Spanish and non-Spanish language groups (Table 4). Among U.S. citizens aged 18 or more years who speak Spanish at home, 64 percent report that they speak English "very well," and 21 percent, "well." Around 15 percent of the group have poor English language skills, i.e., described as "not well" or "not at all." U.S. citizens who speak a language other than English or Spanish in the home have a facility in English that is only marginally superior to that of the Spanish-speaking group: 68 percent and 23 percent report their English skills as very good and good, respectively, while only 9 percent describe their English skills as poor.

In contrast to these data for citizens, the information for noncitizens in Table 4 reveals a much lower level of English-language proficiency and also greater differences between the Spanish and other second-language groups. Thus, 41 percent of noncitizens speaking a language other than English or Spanish at home report their English skills as very good, compared to 23 percent for the Spanish-speaking group. The comparable figures for the good language skill category are 29 percent and 23 percent, respectively. And, while 30 percent of noncitizens speaking a language other than English or Spanish at home report their ability in English as poor, fully 55 percent of the Spanish-speaking noncitizens classified their English-language skills in this way.

In summary, English language fluency is related to both citizenship and language background. Spanish speakers are less likely to be proficient in English than are other second-language speakers, and noncitizens are far less likely to be proficient in English than are naturalized citizens.

In addition to age and state of residence, educational attainment and duration of residence in the U.S. may also be important influences on an individual's language skills. These factors will not only influence second-language retention, but may also affect the individual's proficiency in English. Chiswick and Miller (1992; 1995), for example, show that there is a strong positive relationship between educational attainment and proficiency in English among immigrants from countries in which English is not the primary language. For these immigrants, the positive effect on English fluency of schooling received before immigration may reflect the curriculum of the school attended, with second-language skills being learned only in the more advanced grades. More generally, it is likely that those with more schooling

Table 5
Educational Attainment Completed among Persons Aged 25 to 64 Who Speak a Language other than English at Home, by Spanish/Non-Spanish Language and by Nativity, 1990 US Census
(Percent)

Education (years)	Native Born		US Territories		Foreign Born		Total[a]	US Pop.[b]
	Spanish	Other	Spanish	Other	Spanish	Other		
0 to 8	12.9	8.5	26.4	8.3	41.7	14.6	21.2	6.6
9 to 11	14.4	9.3	21.1	9.1	11.9	6.2	10.7	9.4
12	30.9	30.7	29.5	43.8	22.9	24.6	26.7	33.8
13 to 15	26.8	26.6	15.2	30.9	14.9	21.4	21.4	27.5
16	9.8	15.4	4.7	4.1	5.0	19.2	12.0	14.7
16+	5.2	9.6	3.1	3.8	3.6	14.0	8.0	7.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number ('000)	3909.9	2689.1	766.5	22.4	4739.8	5337.4	17465.2	127443.1

Notes: [a] Total refers to individuals aged 25 to 64 who speak a language other than English at home; [b] U.S. Population refers to all persons aged 25 to 64, including those who speak only English at home.

would be more proficient in acquiring language skills. In addition, the positive relationship between educational attainment and English-language proficiency could be the outcome of a third process, in which those with higher levels of ability acquire more schooling and are more capable of mastering other skills, such as learning a second language.

Table 5 presents data on the distribution of the various nativity and language groups across educational attainment among those 25 to 64 years of age. The data reveal that individuals who speak a language other than English at home have lower educational attainment than does the U.S. population in general. Thus, 21 percent of 25- to 64-year-olds who speak a language other than English at home have 0–8 years of education, and 11 percent have 9–11 years of education. This compares with 7 and 9 percent, respectively, among the U.S. population in general. At the other end of the education spectrum, 12 percent of those who speak a language other than English at home have 16 years of education, and 8 percent have more than 16 years of education. The comparable figures are quite similar for the U.S. population, 15 percent and 8 percent, respectively.

Another pattern that is evident in the data in Table 5 is the difference between the Spanish and other language groups. For each nativity group, the Spanish language group has a lower educational attainment. For example, consider the foreign born who speak a language other than English in the home: 42 percent of the Spanish language group are in the 0–8 years education category compared to 15 percent of the other language groups, while 12 percent of the foreign-born Spanish language group are in the next higher education category, 9–11 years, compared to 6 percent of the other language groups. These data reflect two related factors—the relatively low level of skill of immigrants of Hispanic origin, and the positive links between educational attainment and English language skills.

An additional factor that may affect the language retention and language skills of the foreign born is the length of time they have lived in the U.S. The longer a person lives in the U.S., the more likely it is that he or she will acquire some English language skills or will improve existing skills. This adjustment factor has been emphasized in studies of the economic adjustment of immigrants, which focus on the determinants of earnings and occupational attainment. Language skills can be acquired merely by living and interacting with others in a language environment, even if there is no formal training.

Age at immigration is also likely to be important. Immigrants arriving as youths are likely to gain greater fluency in English than are older immigrants with the same number of years in the U.S. Children have a facility for acquiring new spoken-language skills, which diminishes sharply as they become adults. In addition, youths gain a more intensive exposure to English through schools than adults gain at home or in the labor market, and thus rapidly acquire fluency in English. Furthermore, the benefits accruing to language skills will tend to be greater among youths, due to the complementary nature of dominant-language skills and other skills, such as mastering school subjects, and the longer period over which they can reap the benefits from knowing English.

Tables 6 and 7 present information on language skills in relation to duration of residence in the U.S. Separate tables are presented for youths aged 5 to 17 years and for adults aged 25 to 64 years. Individuals who speak only English at home are also included in these tables.

The first thing to note about Table 6 is that the proportion speaking only English rises rapidly with duration of residence. Thus, among the group of recent arrivals aged 5 to 17, only 15.4 percent speak only English. But, among the longest duration category for 5- to 17-year-olds, 11 to 17 years of residence, 44.9 percent speak only English at home. Around one-half of recent

Table 6
Language Skills by Duration of Residence in the United States for Youths Aged 5 to 17 Years, Foreign Born, 1990 US Census
(Percent)

Duration (Years)	Speaks Only English at Home	Speaks Spanish At Home		Speaks Other Languages at Home		Total
		Speaks English Very Well or Well	Speaks English Not Well or Not at All	Speaks English Very Well or Well	Speaks English Not Well or Not at All	
0 to 3	15.4	23.6	25.0	23.6	12.3	100.0
4 to 5	25.1	31.1	12.1	27.3	4.4	100.0
6 to 10	29.3	35.5	4.1	28.7	2.4	100.0
11 to 17	44.9	31.5	2.0	20.6	0.9	100.0
Total	27.8	30.4	11.2	25.2	5.3	100.0

arrivals speak Spanish at home, whereas this falls to about one-third among the longest duration of residence category.

It is interesting to note that, among the Spanish speakers in the U.S. for three or fewer years, those with good English skills and with inferior English skills are of equal size. However, few are categorized as having inferior language skills among the 11–17-years-duration category. Individuals who arrive in the U.S. as youths, therefore, rapidly acquire English language skills. Other language groups account for approximately 36 percent of the recent arrivals and 22 percent of longer-term immigrants. Again, there is clear evidence of a rapid English learning process among individuals who migrate while young.

A similar story pertains for those persons, 25 to 64 years of age, documented in Table 7. In this instance, the percent speaking only English rises from 13 percent among recent arrivals to 45 percent among longer-term settlers. Unlike the case of 5- to 17-year-olds where the Spanish language group dominated, the recent arrivals among the 25- to 64-year-olds are dominated by other language groups (51 percent of the total). Spanish and the other language groups are equally likely to be found among the duration category of 6 to 10 years. However, there is a major difference in their language skills. Members of the Spanish language group are equally likely to have good or poor English language skills, whereas members of the other language groups are more likely to have good English language skills (33 percent) than they are to

Table 7
Language Skills by Duration of Residence in the United States for Adults Aged 25 to 64 Years, Foreign Born, 1990 US Census (Percent)

Duration (Years)	Speaks Only English at Home	Speaks Spanish At Home		Speaks Other Languages at Home		Total
		Speaks English Very Well or Well	Speaks English Not Well or Not at All	Speaks English Very Well or Well	Speaks English Not Well or Not at All	
0 to 3	13.1	12.1	24.1	32.1	18.6	100.0
4 to 5	12.0	15.8	26.1	32.7	13.3	100.0
6 to 10	12.6	20.5	23.2	33.0	10.6	100.0
11 to 20	16.0	24.9	18.6	34.3	6.3	100.0
21 to 30	30.8	29.5	10.9	26.1	2.7	100.0
31+	45.3	21.1	5.4	26.4	1.8	100.0
Total	22.3	22.4	17.0	30.8	7.5	100.0

have poor English language skills (11 percent). Among the longest duration category included in Table 7, 31 or more years, 5.4 percent are Spanish speakers who still have poor English skills, while only 1.8 percent of the other language groups have poor English skills.

Again, there is evidence of considerable improvement in English language skills with duration of residence, though this improvement is not as pronounced for the Spanish language group as it is for the other language groups. Moreover, the improvement in language skills with duration of residence is not as rapid for the 25- to 64-year-old age bracket (Table 7) as it is for the 5- to 17-year-old age bracket (Table 6). Clearly, age, or age at migration to the U.S., is an important factor determining language attainment.

Table 8 presents information on a number of the socioeconomic characteristics of the foreign born by language group to provide a fuller statistical portrait of these populations.[3] The first column of data lists information on the relative importance of the different language groups, including the monolingual English speakers, among the foreign born. One item of particular interest is that Spanish speakers outnumber monolingual English speakers among the foreign born by almost two to one.

Table 8
Selected Characteristics of the Foreign Born by Language Spoken at Home, 1990 US Census

Language	Foreign Born (%)	School Enrollment Rate, Ages 15–17	Fraction 12 or More Years of Schooling, Ages 25–64	Earnings, Males Ages 25–64 ($)	Fraction 15 or More Years in US	Fertility		Fraction Females 25–64 in Labor Force	Fraction US Citizens, Ages 25–64
						No Children Ever Born, Women 15–30	Number of Children Born, Women 45–64		
English Only	20.9	0.91	0.86	34,105.	0.64	0.64	2.51	0.69	0.52
Spanish	37.6	0.79	0.46	16,671.	0.42	0.47	3.47	0.61	0.29
Chinese	5.3	0.96	0.78	24,291.	0.28	0.81	3.00	0.68	0.47
Tagalog	3.9	0.92	0.91	25,941.	0.35	0.64	3.07	0.84	0.57
German	2.7	0.88	0.86	38,417.	0.78	0.60	2.17	0.60	0.59
Korean	2.7	0.95	0.88	27,915.	0.24	0.68	2.60	0.61	0.43
Italian	2.5	(a)	0.55	29,536.	0.85	0.66	2.60	0.57	0.66
Vietnamese	2.2	0.95	0.73	19,505.	0.06	0.73	3.99	0.63	0.49
French	2.0	0.90	0.84	30,580.	0.50	0.67	2.41	0.68	0.38
Polish	1.5	0.92	0.79	25,335.	0.43	0.63	2.16	0.70	0.45
Portuguese	1.5	0.88	0.51	23,843.	0.52	0.62	2.72	0.69	0.38
Hindi	1.5	0.94	0.90	34,269.	0.25	0.61	2.90	0.60	0.38
Arabic	1.3	0.92	0.83	26,267.	0.31	0.55	3.36	0.43	0.52
Japanese	1.3	0.95	0.93	47,644.	0.40	0.78	1.89	0.43	0.25
Russian	0.9	0.90	0.89	23,643.	0.15	0.65	1.67	0.63	0.51
Persian	0.9	0.95	0.94	31,094.	0.15	0.74	3.09	0.55	0.28
Thai	0.9	0.93	0.65	17,535.	0.20	0.61	3.16	0.65	0.27
Greek	0.9	(a)	0.62	28,871.	0.76	0.61	2.22	0.55	0.69
Fre. Creole	0.7	0.92	0.63	14,950.	0.24	0.58	3.32	0.79	0.24
Mon-Khmer	0.6	0.93	0.43	12,032.	0.02	0.58	4.75	0.40	0.21
Armenian	0.6	0.93	0.70	25,495.	0.25	0.67	2.40	0.47	0.43
Hungarian	0.5	(a)	0.85	35,466.	0.74	0.70	1.94	0.63	0.75
Dutch	0.4	(a)	0.91	37,852.	0.70	0.70	2.68	0.61	0.50
Hebrew	0.4	0.97	0.93	40,082.	0.36	0.65	2.50	0.56	0.51
Yiddish	0.4	(a)	0.74	28,199.	0.83	(a)	3.34	0.40	0.81
Other Languages[b]	6.1	0.93	0.83	28,879.	0.36	0.65	2.61	0.74	0.42
Total	100.0	0.86	0.68	24,540.	0.45	0.57	2.84	0.64	0.41

Notes: [a] = Fewer than 3,000 individuals in the population (weighted); [b] = Includes specific language not reported.

The second column of Table 8 gives information on the fraction of the popu lation, aged 15 to 17, enrolled at school. The mean rate for the foreign born 86 percent, and the range is from 79 percent (Spanish) to 97 percent (Hebrew A general pattern emerges: the Asian language groups have relatively hig rates of school enrollment, followed by the European language groups, whi the Spanish language group has the lowest rate. The school enrollment ra of 79 percent for the Spanish language group is 9 percentage points low than that of the groups with the next lowest level of participation in schoc ing (German and Portuguese).

The data on the fraction of the various language groups with 12 or more yea of schooling among adults, presented in the third column of Table 8, mirrc in some ways, the information on school enrollment. However, there are som important differences, which can be explained by drawing attention to th three main features of the data. The first, and most prominent, feature is th very low level of educational attainment of the Spanish language group. F those aged 25–64, only 46 percent of the Spanish language group have 12 more years of schooling, compared to 68 percent overall. The second featu is the tendency for many European language groups to have relatively lo levels of schooling (e.g., Italian, Portuguese), while many Asian langua groups have relatively high educational attainments. The third feature, whic points to interesting intergenerational characteristics of language groups, that many of the language groups with a high proportion of recent arriva have low levels of educational attainment among the adult population, bu high youth school enrollment rates. For example, the Mon-Khmer langua group has only 43 percent of adults with 12 or more years of education attainment, which is well below average, but a 15- to 17-year-old school en rollment rate of 93 percent, which is average. Less extreme but similar p terns are found among the Thai, French Creole, and Armenian speakers.

The mean earnings of males aged 25 to 64 by language group are reported Table 8, column 4. For all foreign born the mean is $24,540. Language grou having mean earnings well above average include Japanese ($47,644), H brew ($40,082), German ($38,417) and Dutch ($37,852). At the other end the spectrum, the Mon-Khmer (Cambodian and Hmong) ($12,032), Frenc Creole ($14,950), Spanish ($16,671), Thai ($17,535) and Vietnamese ($19,50 language groups have mean earnings well below average. Groups with ear ings below average tend also to have educational attainments below averag poor English skills, and, with the exception of Spanish speakers, have been the U.S. for relatively short periods of time. The links between earnings, ed cational attainment and duration of residence will be analyzed formally the analysis of earnings that is presented below.

Column 5 in Table 8 gives the fraction of each language group that has been in the U.S. for 15 or more years. Across all language groups the mean is 0.45, indicating that 45 percent of foreign born residents have been in the U.S. for 15 or more years. The range in values is from 0.06 (Vietnamese language group) to 0.85 (Italian language group). In addition to the Vietnamese, the Chinese, Korean, Hindi, Russian, Persian, Thai, French Creole, Mon-Khmer and Armenian are the language groups where the speakers are predominately recent arrivals.

Information on two dimensions of fertility are presented in the next section of Table 8: column 6 reports the proportion of women in the 15- to 30-year-old age range who are childless, while column 7 reports the number of children ever born to women aged 45 to 64. The first set of data provide information on trends in fertility among the younger generation, while the second provides a measure of past fertility among older women. The mean number of children ever born per woman, aged 45 to 64, is 2.84. Language groups with relatively high levels of fertility include Mon-Khmer (almost five children per female aged 45 to 64), Vietnamese (4.0 children), Spanish (3.5 children), Arabic (3.4 children) and Yiddish (3.3 children). Language groups in which the number of children per female aged 45 to 64 is relatively low include Russian (1.67), Japanese (1.89), Hungarian (1.94), German and Polish (2.2 children per woman aged 45–64). Most other language groups have close to the average of 2.8 children per woman aged 45 to 64.

The pattern of fertility among the younger age groups differs by language group. Thus, whereas 57 percent of the total sample of 15- to 30-year-olds is childless, among the Spanish language group the comparable figure is only 47 percent. Indeed, the Spanish language group has the lowest level of childlessness and the highest level of fertility. At the other end of the spectrum, however, the Chinese, Japanese, and Persian language groups are characterized by relatively high levels of childlessness among young women, due to either low rates of fertility or considerable delays in commencing a family.

The proportion of females aged 25 to 64 who participate in the labor force is presented in column 8 of Table 8. The mean participation rate is 64 percent, although there is considerable variation around this mean. For example, females who speak Tagalog at home have a labor force participation rate of 84 percent, and those who speak French Creole have a labor force participation rate of 79 percent. The language groups for which women are least likely to be in the labor force are the Yiddish (40 percent participation rate), Mon-Khmer (40 percent), Arabic (43 percent) and Japanese (43 percent).

Citizenship rates also vary across the language groups. The highest rates of citizenship are among the European language groups (German, Italian, Greek, Hungarian, but not French), while the lowest rates are among the Spanish (29 percent), Japanese (25 percent), Thai (27 percent), French Creole (24 percent), and Mon-Khmer (21 percent) language groups.

Some of the associations discussed in relation to Table 8 may be the result of the language category of the individual, while others may have been responsible, in part at least, for membership in the particular language category. For example, the differences in mean earnings of the various language groups may result from the way particular language skills are rewarded in the labor market. However, the language group that the individual is a member of may be determined, in part, by the marital circumstances of the individual. Chiswick and Miller (1995), for example, demonstrated that the foreign born who immigrate with a spouse are more likely to retain their language of origin than are those who marry after immigration or who remain unmarried.

Table 9 permits a more in-depth study of the links between labor market success, as measured by earnings, and language skills. It lists the mean earnings of males aged 25 to 64 who worked in 1989. The means are reported by language skills and by nativity. Reading across the rows of the table gives an indication of the relative earnings of the various broad birthplace groups. Consider the first row for monolingual English speakers: for this group the mean earnings of those born in the U.S. territories, at $27,260, are 16 percent lower than the mean earnings ($32,315) of the native born. In comparison, the mean earnings of the foreign born, at $37,694, exceed by 17 percent the mean earnings of the native born. Recall that these nativity groups differ in terms of educational attainment, years of labor force experience and other characteristics that affect labor market outcomes such as earnings. Hence, the differentials in earnings should be considered only as a crude indicator of the relative labor market position of the various groups. A more accurate assessment of the relative advantage or disadvantage of the nativity groups is provided below, where regression analysis is employed to effect standardized comparisons across nativity groups.

Reading down the columns of Table 9 provides insights into the impact of language skills on earnings. Consider the data for the foreign born for whom language skills matter the most: for the Spanish language group there is a pronounced positive relationship between mean earnings and language skills. Individuals who speak Spanish at home and speak English "well" have mean earnings of $19,653, around 25 percent below their Spanish-speaking counterparts who speak English "very well." Members of the Spanish language

Table 9
Mean Earnings of Males Aged 25–64 Who Worked in 1989 by Language Skills and Nativity, 1990[a] (Dollars)

Language Skills	Native Born	US Territories	Foreign Born	US Population
Speaks Only English at Home	32,315	27,260	37,694	32,428
Speaks Spanish and Speaks English:				
Very Well	25,987	23,902	26,155	25,896
Well	21,664	20,039	19,653	20,253
Not Well	23,258	16,953	14,438	15,736
Not at All	16,649	17,303	11,316	11,638
Speaks Language Other than Spanish and Speaks English:				
Very Well	31,833	23,805	37,300	34,931
Well	26,406	(b)	27,681	27,416
Not Well	27,675	(b)	20,683	22,074
Not at All	(b)	(b)	15,604	16,063

Notes: [a] = Earnings are wage, salary and self-employment income; [b] = fewer than 3,000 individuals in the population (weighted).

group who speak English "not well" have earnings 45 percent below the members of the top language proficiency category. Monolingual Spanish speakers have earnings of only $11,316, which is 57 percent less than the earnings of the Spanish language group who speak English "very well." This pattern is repeated for the other nativity groups, although the distinction between the "well" and "not well" proficiency groups, which is a feature of the data for the foreign born and those born in the U.S. territories, is not evident in the case of the native born.

A third piece of information that can be extracted from Table 9 is the importance of language group *per se*. Thus, if English-Spanish bilinguals are defined as those who speak Spanish at home and who speak English very well, then it is apparent that English-Spanish bilinguals earn considerably less than do monolingual English speakers for each nativity group. The disadvantage is around 12 percent for those born in the U.S. territories, 20 percent for the native born, and 31 percent for the foreign born.

In comparison, while English-Other language speakers originally from the U.S. territories earn less than do monolingual English speakers, native born and foreign born English-Other language bilinguals earn approximately the same as do monolingual English speakers.[4] For the U.S. population as a whole, those who are fully proficient in English, yet speak another language at home (other than Spanish), earn 8 percent more than do those who speak only English.

Hence, the Table 9 data show that birthplace, language background and language skill affect outcomes in the U.S. labor market. It is also apparent from the data that language skills are important for both the foreign born and the native born. With respect to the native born, it is of interest to relate language skills and language use to ancestry. This permits some insights into the important matter of language shift.

Table 10 lists information on second language usage by the native born according to ethnic ancestry. Thus, column 1 lists 14 ancestry groups constructed from the detailed information on ethnic ancestry available in the Census data files. Apart from three categories of noncodable responses placed at the end, these groups are listed in order of numerical importance, with the proportions reported in column 2. Hence, the first ancestry group, "Other European," comprises 40 percent of the native-born population aged 5 and over. The second group, "English-speaking ancestries," comprises 24 percent, while the third most important group is African-Americans, who account for 10 percent of the population. Column 3 lists the percentage of each ancestry group that speaks only English at home. For the first four groups this is 95 percent or higher. However, for some groups, such as the Mexican, Puerto Rican and Cuban ancestry groups, relatively few speak only English at home. For example, among the native born of Mexican ancestry, only 35.3 percent speak only English at home. This figure indicates a very low level of language shift away from Spanish towards English.

The final column in Table 10 lists the three most frequent non-English languages spoken by the native born, together with the percentages of individuals who speak these languages. The predominance of Spanish among the "top" languages is interesting. Among Hispanic origin ancestry groups (e.g., Mexicans, Cubans, Puerto Ricans), Spanish is almost exclusively the alternative language used at home. Among the native born who report an "Other European" ancestry, Spanish, Italian and German are the most frequent non-English languages. Among the native born declaring an African-American ancestry, Spanish, French and German are the most frequent languages spoken in homes where non-English languages are used. The Table 10 informa-

Table 10
Languages Spoken at Home, Native Born Aged 5 and Over by Ancestry Group, 1990 US Census[a]

Ancestry	Percent of Total Population	Percent Speaking Only English	Top Three non-English Languages (% speaking these languages)
Other than English speaking European	40.0	94.9	Spanish (17.3), Italian (16.9), German (16.6), Others (49.2)
English Speaking	24.0	97.9	Spanish (53.4), French (21.3), German (10.9), Others (14.4)
African American	10.1	96.9	Spanish (57.2), French (23.0), German (7.3), Others (12.4)
"American"[b]	7.0	96.2	Spanish (41.6), French (30.1), German (8.4), Others (19.8)
Mexican	3.4	35.3	Spanish (99.7), Others (0.3)
Native American (Indian)	2.1	90.5	Navaho (28.1), Spanish (20.2), French (4.7), Others (46.9)
Asian & Pacific Islanders	1.0	68.6	Chinese (27.7), Japanese (17.7), Tagalog (11.0), Others (43.6)
Other Hispanic	0.8	42.4	Spanish (94.1), Fr. Creole (2.6), French (2.0), Others (1.2)
Puerto Rican	0.4	27.4	Spanish (99.7), Others (0.3)
Middle East	0.4	78.5	Arabic (37.8), Armenian (19.8), Spanish (9.5), Others (33.0)
Cuban	0.1	26.3	Spanish (99.7), Others (0.3)
Uncodable	0.8	97.8	Spanish (49.7), French (15.6), German (11.4), Others (23.3)
Religion Response[c]	0.3	86.6	Yiddish (54.6), Hebrew (20.6), Spanish (10.4), Others (14.3)
Not Reported	9.6	94.5	Spanish (59.6), French (9.3), German (7.0), Others (24.1)
Total	100.0	92.7	Spanish (58.4), French (8.5) German (6.6), Others (26.5)

Notes: [a] = First ancestry reported in response to the question on the respondent's ancestry or ethnic origin; [b] = "American," "Yankee," "mixed," "Hillbilly," or similar response given to the question on ethnic ancestry; [c] = Single ancestry response that might reveal the person's religion.

tion, therefore, shows that even for the native born of various ethnic ancestries, the question of language is important, and Spanish has a predominant role, as it is reported by 58 percent of those speaking a language other than English, or by 4 percent of the native born population.

Finally, we examine the characteristics of those who speak Native American (i.e., American Indian) languages at home. They are a numerically small group, about 350,000 individuals, comprising just over 2 percent of all native-born persons reporting that they speak a language other than English at home, or just over one-tenth of one percent of the U.S. population. Among those who reported a Native American Indian ancestry (as their first ancestry), only 6 percent speak a native language, while in the smaller group that reported a Native American race (e.g., American Indian, Eskimo, Aleut) only 18 percent indicated speaking a native language at home.

Table 11 lists selected characteristics of those who, when at home, speak one of the 20 most common American Indian languages, together with summary information for all speakers of American Indian languages and comparison figures for the total U.S. population. The first column indicates the relative importance of the various native languages. The Navaho language is most prevalent, spoken by two-fifths (42 percent) of all individuals who speak Native American languages at home. Other languages of importance are Dakota, Yupik, Cherokee and Pima.

Table 11 also reports the age distribution of the Native American language groups. There is considerable variation across language groups in the proportion between the ages of 5 and 14. While the mean for all native language groups is 17 percent, the range is from a low of 2 percent for Cheyenne to highs of 29 percent for Choctaw and 21 percent for Navaho. This may reflect differential efforts across American Indian language groups towards native language retention, which involve encouraging children to speak the language at home. Alternatively, it may reflect different levels of fertility, such that greater proportions of the Choctaw and Navaho language groups, for example, are young. A striking feature of these data is the relatively low proportion older than age 64, reflecting high fertility rates, shorter life expectancy, and a decline in child mortality in recent decades.

The educational attainment of the Native American language speakers is also reported in Table 11. One-half of those who speak a Native American language at home have 12 or fewer years of education. Only 4 percent have 16 or more years of education. While there are some differences in the educational attainments of the individual language groups, the most striking feature of

Table 11
Selected Characteristics of Those Speaking Native American Languages at Home, 1990 US Census

Native American Language	Native American Languages (percent)	Age (fraction)		Education (fraction)		Native American Race (fraction)	Speaks English Very Well (fraction)	Primary States of Residence (percent)[a]
		Age 5–14	Age 65+	1–12 years	16+ years			
Navaho	41.6	0.21	0.06	0.53	0.02	0.99	0.58	Arizona (53.3), New Mexico (35.9)
Dakota	5.0	0.16	0.09	0.52	0.05	0.95	0.82	South Dakota (56.2), Montana (10.3)
Yupik	4.0	0.21	0.06	0.50	0.02	0.98	0.57	Alaska (100.0)
Cherokee	3.8	0.08	0.08	0.41	0.06	0.78	0.71	Oklahoma (49.4), North Carolina (6.5)
Pima	3.7	0.11	0.07	0.61	0.00	1.00	0.55	Arizona (97.3)
Choctaw	3.4	0.29	0.08	0.57	0.02	0.98	0.49	Mississippi (65.8), Oklahoma (28.2)
Apache	3.4	0.14	0.07	0.50	0.02	0.98	0.50	Arizona (84.4), New Mexico (9.2)
Keres	2.3	0.15	0.14	0.52	0.06	0.99	0.73	New Mexico (98.4)
Muskogee	2.2	0.10	0.14	0.50	0.08	0.79	0.52	Oklahoma (60.7), Florida (21.2)
Ojibwa	1.7	0.13	0.12	0.45	0.16	0.95	0.87	Minnesota (45.1), North Dakota (18.7)
Hopi	1.7	0.04	0.12	0.42	0.04	1.00	0.57	Arizona (94.3)
Eskimo	1.6	0.17	0.09	0.49	0.00	0.99	0.69	Alaska (96.5)
Inupik	1.4	0.11	0.16	0.53	0.02	1.00	0.76	Alaska (100.0)
Zuni	1.4	0.24	0.10	0.55	0.03	0.99	0.51	New Mexico (98.3)
Tewa	1.2	0.10	0.13	0.33	0.03	0.98	0.68	New Mexico (67.9), Arizona (24.1)
Tiwa	0.9	0.23	0.10	0.50	0.07	0.87	0.75	New Mexico (93.8), California (6.2)
Cheyenne	0.8	0.02	0.04	0.36	0.03	0.97	0.83	Montana (46.0), South Dakota (23.4)
Mohawk	0.7	0.12	0.13	0.53	0.03	0.80	0.80	New York (90.2)
Shoshoni	0.7	0.05	0.07	0.36	0.06	1.00	0.73	Idaho (47.2), Nevada (33.8)
American Indian[b]	4.6	0.09	0.13	0.44	0.13	0.75	0.77	California (12.9), Florida (7.7)
Other[c]	13.8	0.16	0.12	0.48	0.05	0.81	0.66	Oklahama (12.9), California (11.8)
Total	100.0	0.17	0.08	0.50	0.04	0.92	0.63	Arizona (31.8), New Mexico (21.4)[d]
U.S. Pop.	1.1[e]	0.15	0.14	0.35	0.15	0.01	0.94[f]	California (11.9), New York (7.2)[g]

Notes: [a] = Percent of those speaking the language; [b] = Specific Native American language not reported; [c] = Other Native American languages indigenous to the Western Hemisphere; [d] = Arizona and New Mexico, with 53.2% of the Native American language speakers, contain 1.5% and 0.6% of the total U.S. population, respectively; [e] = Native American language speakers as a percent of non-English language speakers; [f] = Speaks only English (86.2) or speaks English very well (7.7%). [g] = Percent of U.S. population in the two most populous states.

these data is the comparison that can be made with the total U.S. population in the last row of Table 11. Among all Americans, only 35 percent have 12 or fewer years of education, and 15 percent have 16 or more years. The groups speaking Native American languages at home, therefore, are characterized by relatively low levels of educational attainment.

The fourth set of data in Table 11 shows the proportion of each of the Native American language speakers who report a Native American race (defined to include Aleuts, Eskimos and American Indian racial groups).[5] Overall, 93 percent of this group reports a Native American race; for many native language groups, reporting a Native American racial group is almost universal. Examples of these groups are the Navaho, Pima, Choctaw, Apache and Keres language groups. There are some language groups, however, in which the likelihood of being a member of an American Indian racial group is much lower, at around 80 percent. Examples of this among the more frequent native languages are the generic American Indian language (75 percent), and the Muskogee (79 percent) and Cherokee (78 percent) language groups.

The final set of information in Table 11 gives the proportion of each Native American language group that speaks English very well. Overall, the proportion for all Native American language groups is 63 percent; among the Navaho, it is 58 percent. For some language groups, such as the Choctaw, Apache and Muskogee, the proportion speaking English very well is only around one-half. For many other groups, however, facility in the English language is much better, with around 80 percent reporting that they could speak English very well. Examples here include the Dakota (82 percent) and Ojibwa (87 percent) language groups.

A MODEL OF ENGLISH LANGUAGE FLUENCY

Recent studies by Chiswick (1991) and Chiswick and Miller (1992; 1995) have developed the theory of the determination of language fluency. The modeling strategy employed in these studies reflects a human capital perspective. Human capital refers to investments that have three characteristics: first, they are embodied in the individual, unlike physical capital (e.g., a machine) that can be separated from the person; second, they are productive in the labor market or in consumption activities, that is, they raise labor market earnings or lower the cost of consumption; finally, they are created at a sacrifice (expenditure) of time and out-of-pocket resources. Language skills satisfy these three basic requirements.

The Theoretical Framework

The theory of English language acquisition has focused on immigrants, although it can, as shown below, be readily generalized to other groups. The focus on immigrants is due to their apparent greater sensitivity to the issues concerned. For immigrants, three conceptual variables have been identified as prime determinants of language fluency: economic incentives, exposure, and efficiency.

The data in Table 9 reveal that individuals who speak only English at home or, where a language other than English is spoken at home, speak English "very well" or "well," earn more than those who experience difficulties with the English language. The additional earnings that are associated with superior language skills form part of the economic incentive to improve language skills. Other economic incentives are greater productivity of investment in schooling, the lower rate of unemployment, and the decrease in the cost of consumption (e.g., lower costs of searching for favorable prices or a higher quality product) that appear to be associated with fluency in the English language.

The economic return of any skill, be it language fluency or training on the job, depends on the length of time the skill will be utilized. In the case of job training, the return on any investment will depend upon job tenure, and this is why it is often argued that women, who have a higher rate of job turnover and leave the labor market more frequently than men, invest in less on-the-job training than do their male counterparts. Similarly, employers are less willing to invest in the job skills of women.

Moreover, the profitability of the investment in English language fluency in the U.S. will depend on the probability of return migration. Immigrant groups with higher probabilities of returning to their country of origin will, on average, secure a relatively lower return on any investment in learning English. Consequently, low levels of English fluency would be expected among such groups. This explanation seems to have particular relevance for Mexican immigrants in the U.S., who have a higher rate of to and from migration than do other immigrant populations.

Exposure refers to learning by doing and the formal instruction aspects of acquiring fluency in the destination language. It includes the extent to which others, whether in person or through the media, use English in one's presence and the extent to which the person himself or herself utilizes English. Chiswick and Miller (1995) argue that exposure has three dimensions: expo-

sure prior to immigration, duration of exposure in the destination, and the intensity of exposure per time unit.

Efficiency in English language acquisition is greater the closer the "linguistic distance" between English and the immigrant's mother tongue. For example, it is much more difficult for an immigrant whose native tongue is Chinese to learn English than it is for an immigrant whose native tongue is French. Early studies of language determinants were hampered in their analysis of this issue by the unavailability of measures of linguistic distance. It is now possible, however, to use the degree of difficulty that English speakers have learning foreign languages as a measure of linguistic distance.[6] Thus, the learning scores can be incorporated into the model of language fluency as measures of the effects of linguistic distance on learning English.

Exposure prior to immigration will, however, be affected by factors other than linguistic distance. In cases where English is used as a lingua franca in the country of origin, for example in India, or where English-speaking foreigners are common (due, for example, to overseas U.S. military bases), it is possible that immigrants will have received exposure to English even though they have a non-English native tongue. Such exposure will enhance English language skills.

The length of time that an immigrant has resided in the U.S. provides a natural index of the second dimension of exposure, namely time units of exposure in the destination. Many studies of immigrant adjustment have shown that as length of residence in the U.S. increases, immigrants adjust to the specific conditions of U.S. society. The adjustment is associated with growth in earnings, higher occupational attainment and lower unemployment. Part of the adjustment process appears to involve the learning of English. This is presumably due to the interactions that come about as part of everyday life in the country of destination, as well as specific investments that are made in language training, such as English-as-a-Second-Language programs.

The final dimension of exposure is the intensity of exposure per unit of time in the destination, which depends on two main factors. The first is the extent to which the individual's mother tongue is used in the neighborhood, defined to be either the region of residence or the place of work. These are essentially global neighborhood effects, and they have been measured in several previous studies by the extent to which the individual's mother tongue is spoken in the area in which he/she lives, whether by immigrants or natives. It is hypothesized that the greater the extent of this phenomenon, the easier it is to avoid using English and hence the poorer the English language skills. In a study for

Australia, Chiswick and Miller (1996a) extend this line of argument by incorporating in the analysis information on relatives in the country and the number of ethnic language newspapers readily available on the grounds that these would represent the presence and strength of formal and informal ethnic networks. This study demonstrated that English language fluency is negatively affected by the presence of relatives and ethnic newspapers.

A local neighborhood effect that may be quite important is associated with the immigrant's immediate family. There are several avenues that are relevant here. First, where the immigrant is married and the spouse has the same mother tongue, then opportunities for conversation in that mother tongue within the home substitute for conversations in English, and thus both reduce the need to learn English and limit the learning by doing that may otherwise take place.

Second, language skills may be affected by the presence of children. There are at least three factors that may be at work here. The first involves attempts by parents to teach their children their language of origin. Such attempts may be motivated by desires for return migration, or by a drive to maintain the culture of the country of origin. This appears to be an important feature of the language attainment process in Australia, where the government's current policy of multiculturalism favors language retention. (see Chiswick and Miller, 1996b) The second way in which children may affect the language outcomes of their parents is through a child-to-parent transmission mechanism. Under this scenario, parents learn English from their children. It is well documented in the second-language acquisition literature that children learn languages more rapidly than do older persons, in part because they are more efficient at learning. (see Long, 1990) They also have a more intensive exposure to English through the school system and through interaction with other children. Third, children may serve as parental interpreters to the world outside the immigrant-language enclave. To the extent that they perform this function, children will reduce the incentive and opportunity for their parents to learn English.

Efficiency in language acquisition refers to the extent to which a given amount of destination language exposure produces language fluency. As noted above, the very young have a superior ability to acquire language skills. Such an ability may also reside in those who are better educated. The greater efficiency in language acquisition of the better educated may arise because they have a greater mastery of their mother tongue and are more efficient in learning new concepts and new terminology. Furthermore, those with schooling in the destination would be expected to be more fluent in the destination language, as fluency may be a prerequisite for school enrollment and the destination schooling itself would enhance fluency.

Efficiency in language acquisition may also vary according to immigrant category. In this regard, attention has been drawn to the situation of refugees. Chiswick (1978) has argued that refugees are less intensively self-selected for the characteristics that enhance a successful adjustment in the destination. Factors other than successful adjustment, such as escaping political persecution, take precedence in the refugee migration decision. Moreover, refugees generally have invested less in preparation for the international move. These factors imply that refugees will be less efficient in acquiring dominant language skills.

The discussion above suggests the following conceptual equation:

LANG = f(economic incentives, exposure, efficiency),

where LANG is a measure of the immigrant's fluency in the dominant language. The empirical counterpart of this conceptual equation is:

LANG = f[expected wage increment for language fluency (+), expected future duration (+), duration in destination (+), married to native of destination (?), married to native of origin (–), children (?), linguistic distance (–), minority language concentration (–), age at migration (–), education (+), sojourner status (–), refugee status (–)],

where the expected partial effects (positive, negative, or ambiguous) are indicated in parentheses.

The Statistical Determinants of Language Skills

The qualitative findings from the formal multiple regression analysis of English language fluency will be presented here. The detailed tables from the formal multiple regression analysis are available upon request from the authors. The analysis is performed for adult (aged 25 to 64 years) foreign born men and women. For the purpose of this analysis fluency is defined as speaking only English at home, or speaking another language but speaking English "very well" or "well." Those speaking English "not well" or "not at all" (only a few words) are not considered fluent.

For both men and women, schooling attainment, age at migration and duration of residence in the United States are all very important determinants of fluency: fluency is greater among (a) those with more schooling, by about 3 percentage points per year of schooling, (b) those who immigrate at a younger age (Long, 1990), and (c) those who have been in the U.S. a longer period of time. The effect on fluency of a year in the U.S. is greatest for recent immigrants, and diminishes the longer an immigrant is in the country. At 10 years

in the U.S., an extra year raises fluency by about 2 percentage points, or by about the equivalent of two-thirds of a year of schooling.

Although the direction of causation may be ambiguous, married immigrants are more fluent than are their unmarried counterparts. This advantage is by 3 percentage points for married men but is less important (1 percentage point) for married women. Data in the 1980 Census permitted a determination of whether the current marriage occurred prior to immigration. Marriage prior to immigration was found to lower fluency in English. (Chiswick and Miller, 1992)

The young age at marriage and the lower rate at which married women participate in the labor market may explain the lower fluency of married women (2 percentage points) than of single women among Mexican immigrants.

Data are available on the number of children in the family for women but not for men in the 1990 Census. The presence of children reduces the English language fluency of immigrant women, the more so (by 4 to 5 percentage points) when there is more than one child. Census data from 1980 also found a negative effect of children on the fluency of their mothers, but a positive effect on their fathers' fluency. (Chiswick and Miller, 1992)

Those who live in a state where a larger proportion of the population, whether native or foreign born, speak their origin language are less fluent in English. This effect is most pronounced for immigrants from predominantly Spanish speaking countries, such as Mexico and Cuba, because of the large concentration of Spanish speakers. Fluency tends to be greater for immigrants in rural areas among women (1 percentage point) but not for men. It is also greater for immigrants in the South (by about 2 percentage points) for both sexes. These geographic variables suggest that ready access to others who speak the same non-English language, and presumably also the print and electronic media associated with this concentration, has the effect of reducing fluency in English.

Characteristics of the country of origin do matter. Immigrants with an origin language more distant linguistically from English are less fluent. This distance can have a very powerful effect. The difference in English language fluency between French and Korean speakers due to the measure of linguistic distance is 10 percentage points. This is comparable to the effect on fluency of three additional years of schooling.

The statistical analysis explains much of the "simple" differences in English language fluency by country of origin among immigrants in the U.S. For some

countries much of the difference is due to low levels of education, recentness of arrival and large concentrations of people speaking their origin language (e.g., Mexican immigrants). For others, linguistic distance is a major explanatory factor (e.g., East-Asian immigrants). Even after controlling statistically for the effects of all of the variables discussed above, including minority language concentration and linguistic distance, differences in English language fluency by country of origin persist. The least fluent group are immigrants from primarily refugee source countries. Even when other variables are the same, immigrants from the (former) USSR, China, Indochina and Cuba have fluency rates 8 to 10 percentage points less than do those from western and southern Europe. Immigrants from Mexico, too, suffer a large linguistic disadvantage, even when other factors are the same, falling 6 percentage points behind western and southern European immigrants. This may well reflect the adverse influence on English language fluency of the sojourner effect, that is, a greater propensity among Mexican immigrants for viewing their stay in the U.S. as temporary or to be combined with periodic return migration to Mexico. For most other countries of birth, fluency rates are either greater than or show little difference from those of western and southern European immigrants.

The Labor Market Effects of Language Skills

It is to be expected that lesser fluency in English would, other things being equal, detract from the economic well-being of an individual, whether foreign born or native born. Those with limited English language skills will have greater difficulty shopping for the lowest prices for goods and services of a given quality, or shopping for higher quality goods and services at a given price. They would also have more limited opportunities in finding a job and in obtaining the highest wage offer that their skills might otherwise generate.

While these points might seem self-evident, it is useful to present some statistical findings on this issue. Unfortunately, the data on prices paid and the quality of consumer goods and services purchased do not permit an analysis of the impact of English language skills. The 1990 Census of Population, however, does provide the information necessary for an analysis of the effect of English language skills on labor market characteristics, including earnings and employment.

A simple tabulation of the earnings of individuals by various levels of English language skills could be misleading. As shown above, English language skills are greater for those with more years of schooling among immigrants from English-speaking countries and among immigrants in the United States a longer period of time. These factors have also been shown to be important determinants of earnings and employment.[7]

Multivariate statistical analysis is used to isolate the effects of English language proficiency on earnings and employment for adult (aged 25 to 64) men using the data from the 1990 Census of Population. The estimating equations follow standard procedures and relate either the natural logarithm of earnings, or weeks worked for the employment analysis, to English language fluency and a set of control variables, including years of schooling, total labor market experience, marital status, location in the United States, race and, for the foreign born, duration of residence in the United States, citizenship and country of origin. The analysis is limited to males in this study because of the difficulties in estimating earnings and employment equations for females; unfortunately, the 1990 Census data does not have a satisfactory mechanism for identifying periods of interrupted participation in the labor market.

Proficiency in the English language is measured by whether the person speaks only English at home or, if he speaks another language, whether he speaks English very well or well. Proficiency in English is associated with 16 percent higher weekly earnings, all other factors being equal, among all immigrants and by a similar amount (15 percent higher earnings) when the data are limited to immigrants from Mexico. To place this in context, the 16 percent higher earnings among adult male immigrants who are fluent (by the definition used here) is the same as the effect on earnings of three additional years of schooling (5 percent higher earnings per year of schooling) and is twice the magnitude of the effect of U.S. citizenship on earnings (8 percent higher earnings). The 16 percent higher weekly earnings in the 1990 Census data repeats the findings of the 1980 Census but is greater than the effect of destination language fluency on earnings found in the other major immigrant-receiving countries, Canada, Australia and Israel. (Chiswick and Miller, 1992; 1995)

The pay-off to English language fluency among the foreign born comes not only in the form of higher weekly earnings, but also through greater employment (weeks worked) in the year. The foreign born who are proficient in English work about three-fourths of one week more than do their counterparts who are not fluent. (Chiswick and Hurst, 1996) This is the equivalent of about 1.5 percent more weeks worked per year, raising the increase in annual earnings from being fluent to about 17.5 percent.

The acquisition of English language fluency among the foreign born who come to the United States is a very productive investment. For a young adult with several decades of working life before him, the 16 percent higher weekly earnings and 17.5 percent higher annual earnings imply a rate of return on the investment in English language skills of about 16 to 18 percent if such an investment requires the equivalent of a whole year of full-time language train-

ing, and a rate of return of 30 to 35 percent if this can be accomplished in six months.

Even among the native born, English language fluency affects earnings, even when other variables are the same. Among the native-born adult men, those who lack fluency in English have a lower level of schooling (and hence lower earnings), but also have 5 percent lower earnings when schooling is held constant. Among men of Hispanic origin, those who are not fluent in English have 6 percent lower earnings.

SUMMARY AND CONCLUSIONS

This article has provided a statistical portrait of those in the United States who speak a language other than English, including the degree of their fluency in English. The analysis is based on the microdata files from the 1990 Census of Population, which provides the very large sample sizes and the wealth of socioeconomic and demographic variables that are needed for this purpose.

Fourteen percent of the U.S. population aged 5 and over speak a language other than, or in addition to, English at home. This ranges from 7 percent for the native born (many of whom are the children of immigrants) to nearly 80 percent of the foreign born.

The most frequently spoken language after English is Spanish. Among those who speak a language other than only English at home, Spanish is spoken by 55 percent (58 percent for the native born and 48 percent for the foreign born). A myriad of other languages follow, with French (5 percent of the non-English speakers) in second place and other European, Asian and Native American Indian languages following. Thus, the languages spoken are characterized by both concentration (Spanish) and enormous diversity.

As we might expect from the patterns of immigration flows, the Spanish language speakers are younger, have lower levels of schooling and English language fluency, and are more heavily concentrated in California and Texas than are those who speak other languages.

The English language fluency of those who speak a foreign language varies by nativity, duration in the United States, the language spoken, and education, among other factors. English language fluency, as self-reported on a four-point scale, is greater for foreign language speakers who are native born, speak a language other than Spanish, have a higher level of education and, if foreign born, have lived in the U.S. a longer period of time and are U.S. citizens.

Earnings and employment (weeks worked) are higher for those with a greater fluency in English. Indeed, other things being the same, among the foreign born weekly earnings are higher by 16 percent and weeks worked in the year by 1.5 percent for those who are more fluent in English. Even among the native born, those who are less than fluent in English have lower earnings.

Special attention was given to Native American Indian languages. A native language is spoken by about 350,000 persons. This is just over 2 percent of the native born population that speaks a language other than English at home or just over one-tenth of one percent of the U.S. population. Expressed differently, a native language is spoken by 6 percent of those reporting an Indian/Native American ancestry, and by 18 percent of the smaller group reporting their race as Indian/Native American. Thus, even among those most closely identified as Native American, relatively few speak a native language.

Of those speaking a native language, 4 out of 10 speak Navaho, and the others speak one or another of a large number of languages, from Dakota, in second place (5 percent), to languages with only a few speakers. Detailed demographic data are provided on those who speak Native American languages.

The prospect for the long-term vitality of languages other than English in the United States is not bright. For most languages, whether of European, Asian or Latin American origin, the persistence of a significant number of speakers of the language is doubtful. The U.S.-born children are less likely to maintain the linguistic abilities of their parents. The high mobility of the U.S. population and increasing intermarriage reduce the likelihood of living in a linguistic enclave and of marrying someone with the same foreign language skills. There are few economic and decreasing cultural rewards for language maintenance. For some languages, the continued infusion of immigrants will give the appearance of persistence, but this will largely reflect a transitional phase in which the immigrant language is spoken in the first (immigrant) generation, less so in the second generation, and largely disappearing by the third generation.

The languages that are most likely to persist will be those that have a very large group of speakers, many of whom continue to live in linguistic enclaves or communities, where intermarriage is minimal and where there is a particular cultural or economic purpose or rationale for maintaining the language (e.g., the language is used in religious practices). Language maintenance for the sake of retaining the language of one's ancestors is unlikely to be of sufficient value in the open, mobile society of the United States for it to have significant intergenerational persistence.

Among the Native American Indian languages Navaho has the greatest likelihood of persistence. It is the largest native language group, with its speakers highly concentrated in cultural and ethnic enclaves (nearly 90 percent of Navaho speakers live in Arizona and New Mexico). Among European, Latin American and Asian languages, except perhaps for Spanish, linguistic persistence will be dependent on future immigrant flows. If the immigration of, for example, Korean or Greek speakers decreases, with the passage of the immigrant generation the languages will experience a decline.

The Spanish language appears to have the greatest prospects for persistence. As immigration ebbs and flows from country to country a new infusion of different languages appears in the U.S. Given the large number of Spanish-speaking countries, however, changes in the relative importance of source countries among this linguistic origin need not diminish its role in the overall immigrant stream. Moreover, given the proximity of Spanish speaking areas to the United States, high rates of migration of Spanish speakers, whether from Mexico, Cuba, Puerto Rico, Central America or South America, will continue.

Spanish speakers now form by far the largest single non-English linguistic community in the United States, comprising 55 percent of foreign language speakers. Large Spanish speaking communities have been established in several regions of the country, and Spanish language institutions and media (print and electronic) are well established.

The Spanish language has shown greater persistence than have other non-native languages. Spanish language immigrants are slower at acquiring English language skills and the intergenerational language shift is less intense among the Spanish-origin population. The persistence can be largely explained by lower levels of schooling, a greater expectation of return migration among immigrants, and the established Spanish language communities and institutions.

To the extent that the greater persistence of Spanish reduces the acquisition of English language skills it is not without its cost. Poorer English language skills among immigrants and the native born retard acquiring more schooling, inhibit employment, lower earnings, and retard participation in the political process.

If current migration patterns continue, the United States in the coming decades is likely to be increasingly characterized by both *linguistic concentration*, with Spanish increasing its share in the U.S. population, and *linguistic diversity*, with an increasing number of languages being represented by a small but not trivial share of the population. This combination will pose greater chal-

lenges and opportunities for the educational, political, social and economic institutions of the United States.

NOTES

1. The term "American Indian" languages is used in this paper to avoid confusion with languages of the Indian subcontinent and confusion as to whether Native American refers to persons born in the U.S.
2. The category "Other States" in Table 3 includes respondents (1.7% of the population) not uniquely identified with a State of Residence. These respondents live in "Public Use Microdata Areas," Census subdivisions, with at least 100,000 persons, which cross state lines.
3. Note that these data have been computed using the 5% sample from the 1990 Census Public Use Microdata Sample and the figures may differ slightly from those previously discussed based on the 1% sample. Differences of this nature are negligible, however.
4. It is unfortunate that data are not available in the Census on the level of fluency in the languages other than English.
5. The 1990 Census coding procedures report only single race responses.
6. For example, Hart-Gonzalez and Lindemann (1993) have calculated language scores for American students of average ability after set periods (16 weeks, 24 weeks) of foreign language training.
7. These issues are discussed in depth in Chiswick (1991), Chiswick and Miller (1988, 1992, 1996a), and Chiswick and Hurst (1996).

APPENDIX

1990 U.S. Census of Population Questions on Language

15a. Does this person speak a language other than English at home?

o Yes o No - Skip to 16

15b. What is this language?

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└ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘

(For example, Chinese, Italian, Spanish, Vietnamese)

15c. How well does this person speak English?

o Very Well o Not Well

o Well o Not at All

Note: Instructions for the respondent indicate that speaking a language at school or speaking just a few words or expressions should not be considered speaking a

language at home. If a person spoke more than one language other than English at home, the language spoken more often or the language learned first was to be reported.

Source: U.S. Bureau of the Census (1993) *1990 Census of Population and Housing, Public Use Microdata Sample, Technical Documentation,* Washington DC: U.S. Government Printing Office.

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REFERENCES

Chiswick, B. R. (1978). The effect of Americanization on the earnings of foreign-born men. *Journal of Political Economy* 86: 897–921.

Chiswick, B. R. (1991). Speaking, reading and earnings among low-skilled immigrants. *Journal of Labor Economics* 9(2): 149–170.

Chiswick, B. R. and Hurst, M. E. (1996). The employment, unemployment and unemployment compensation benefits of immigrants. University of Illinois at Chicago, mimeo.

Chiswick, B. R. and Miller, P. W. (1988). Earnings in Canada: The roles of immigrant generation, French ethnicity and language. *Research in Population Economics* 6: 183–224.

Chiswick, B. R. and Miller, P. W. (1992). Language in the immigrant labor market. In B. R. Chiswick (Ed.) *Immigration, Language, and Ethnicity: Canada and the United States.* Washington D.C.: American Enterprise Institute.

Chiswick, B. R. and Miller, P. W. (1995). The endogeneity between language and earnings: International analyses. *Journal of Labor Economics* 13(2): 246–288.

Chiswick, B. R. and Miller, P. W. (1996a). Ethnic networks and language proficiency among immigrants. *Journal of Population Economics* 9: 16–25.

Chiswick, B. R. and Miller, P. W. (1996b). Immigrants, language and multiculturalism in Australia. University of Western Australia, mimeo.

Chiswick, B. R. and Sullivan, T. A. (1995). The new immigrants. In R. Farley (Ed.) *State of the Union, 1990,* Volume II. New York: Russell Sage Foundation.

Hart-Gonzalez, L. and Lindemann, S. (1993). Expected achievement in speaking proficiency, 1993. School of Language Studies, Foreign Services Institute, Department of State, mimeo.

Long, M. H. (1990). Maturational constraints on language development. *Studies in Second Language Acquisition* 12(3): 251–285.

U.S. Bureau of the Census (1993). *1990 Census of Population and Housing, Public Use Microdata Sample, Technical Documentation.* Washington DC: U.S. Government Printing Office.

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Getting it Right: The Seattle School District Program for Limited-English Proficient Students

Scott K. Baker

On June 25, 1993, in the case of Sang Van v. Seattle School District, a class action suit was filed on behalf of all Limited-English Proficient (LEP) students and their guardians against the Seattle Public Schools. Among the plaintiffs' claims were that the school district did not

- Provide appropriate services (i.e., to meet their language and learning needs) to LEP students, as required by state law;
- Use native language instruction with LEP students to introduce concepts and information during instruction;
- Provide appropriate English-as-a-Second-Language (ESL) instruction;
- Provide LEP students with adequate and appropriate educational materials;
- Provide teachers trained in bilingual instruction methodology;
- Provide adequate training and professional development opportunities to teachers who work with LEP students;
- Adequately evaluate the effects of the programs for LEP students.

The Seattle School District and the state of Washington denied the above allegations, and the two sides began preparing for their court case. The case was settled out of court, however, on April 19, 1994. As part of the settlement, the Seattle School District agreed

- To increase awareness of the multiple instructional methods available for LEP students;
- To take steps to decrease the amount of noninstructional duties of the instructional assistants for LEP students so that they could devote more time to instructional activities;
- To review eligibility of students who waive services for LEP students, as determined by their performance on the reading and language portions of the California Achievement Test (CAT) and other nationally-normed (normative referenced) tests; to inform those parents of children who waive

services for LEP students, but who are eligible for those services, of service benefits;

- To continue to emphasize the recruitment of multicultural and multilingual teaching and support staff who are qualified to teach and who are proficient in both English and a language spoken by a substantial number of LEP students;
- To continue its program of professional development regarding the education of LEP students;
- To engage the Education Service District to conduct an evaluation of the programs for LEP students.

The purpose of this analysis is to present and examine both these programs and the data available on them as they relate to the educational benefits for LEP students.

BACKGROUND ON EDUCATIONAL PROGRAMS FOR LIMITED-ENGLISH STUDENTS

The Seattle School District case highlights some of the tensions in the continuing debate over the most effective way to educate LEP students. Two issues have tended to dominate discussions on instructional practices with language minority students: whether instruction should be primarily in the student's native language or in English, and when is the best time to make the inevitable transition into English language classrooms. (Crawford, 1989; Gersten and Woodward, 1994)

Further study is necessary to determine if the quality of the instructional practices within a given program is more critical to academic success than the actual type of program used with language minority students. A combination of instructional practices that have been documented to be effective with native English-speaking students and specialized instructional practices that are sensitive to the unique circumstances of LEP students may produce the most positive results. Educators have begun to explore more carefully the details of educational programs for language minority students that identify high quality instructional practices, regardless of language of instruction.

Traditional Transitional Bilingual Education Programs

Transitional Bilingual Education (TBE) is the most common model of bilingual education in the U.S. and has generally been understood to mean that students should receive primarily native language instruction during their first few years of school. They should also receive up to an hour per day of

English-as-a-Second Language (ESL) instruction. The amount of ESL instruction increases gradually until students develop sufficient English language skills to be moved into general education mainstream settings. (Gersten and Woodward, 1994)

Advocates of native language instruction for LEP students have argued that premature instruction in a student's second language leads to instructional contexts that are simplified or "watered down" to meet the student's perceived competence. (Gersten and Woodward, 1994) Wong-Fillmore and Valdez (1986) suggested that the rationale for early native language instruction is strongest in the area of reading. Essentially, Wong-Fillmore and Valdez argued that because students find it easier to read in a language they already know than in one they are learning, native language instruction is best. The authors make two important claims that require careful consideration. The first is that positive results of native language instruction may not be apparent or measurable for three or four years. The second is that reading skills can be relatively easily transferred from one language to another.

Research is beginning to show that the type of transfer frequently assumed by proponents of native language instruction is much more difficult for children than was previously believed. (Gersten, 1996; Jiménez, García, and Pearson, 1995; 1996) For example, it seems that even proficient readers work hard and deliberately to transfer knowledge from one language to another. (Jiménez et al., 1995; 1996) Proficient bilingual readers seem to use a number of specific, deliberate strategies to help them transfer what they know from their native language into English. For less proficient readers, these problems of transferring knowledge from one language to another may be immense. (Gersten, 1996; Jiménez et al., 1995; 1996) Chamot and O'Malley (1996) suggest that we may need to teach students explicitly how to access knowledge in their native language in order to successfully perform in English language activities. Unfortunately, there are few concrete guidelines for facilitating these activities, and it is very likely that such a process would delay the ability of the student to *think* in the second language.

Fitzgerald (1995) recently completed an integrative review of research on the cognitive reading strategies of ESL students. Fitzgerald investigated studies addressing a range of issues, including the relation between vocabulary knowledge and reading performance, the word recognition and metacognitive strategies of ESL students, and the influence of prior knowledge and text structure in facilitating reading comprehension. Two findings from Fitzgerald's investigation have significant implications for reading instruction for ESL students. First, there was substantial individual variability among ESL students in their

use of vocabulary knowledge and word recognition strategies to facilitate reading comprehension. Jiménez and his colleagues (Jiménez et al., 1995; 1996) described in vivid detail how ESL readers, with varying degrees of success, used their knowledge of vocabulary in two languages to comprehend text. Second, Fitzgerald found that ESL students used substantively the same cognitive reading strategies as native English speakers used, but that selected facets of those strategies were used less often, or operated more slowly, for ESL students than for native English learners.

Immersion in the Second Language

The strongest contrast to native language instruction is structured immersion, in which students from the outset receive all or nearly all of their instruction in the second language through the implementation of a special curriculum. Advocates of an immersion approach for LEP students in the U.S. invariably point to the success of immersion programs in Canada, in which native English-speaking students are immersed in French, as evidence that immersion models are successful. (Genesee, 1984; Lambert and Tucker, 1972)

Arguments against immersion programs in the U.S. are based on perceived differences between students learning French in Canada and LEP students learning English in the U.S. One argument has been that the status of English in Canada, and that of non-English languages in the U.S., such as Spanish or Hmong, is fundamentally different. English is the dominant language in Canada, and citizens are expected to have a strong command of it. Non-English languages in the U.S. are not viewed as having the same status, value, or usefulness as English. Many educators believe this factor influences the degree of motivation individuals have in respect to learning and maintaining their native language while being immersed in a second language. However, the major responsibility of programs for LEP students in the U.S. is to ensure that students develop English language proficiency, rather than maintaining native languages.

A second argument against the practice of immersion in the U.S. has been that native English-speaking students learning French in Canada are primarily middle-class students who have grown up in homes that support and foster academic achievement. One important consequence is that many Canadian students are involved in academically beneficial English literacy tasks at home while they are immersed in French in school. However, several of the early immersion experiments in Canada included a significant number of children from low-income families, and the results were equally, or even more, positive for these students. (Rossell and Baker, 1996)

It is true that many LEP students in the U.S. are from low socioeconomic status (SES) backgrounds, and providing experiences that explicitly support academic achievement is not typically a priority or routine for their families. (Teale, 1986) Also, many recent immigrants have had little formal schooling. (Foster, 1980; Kleinman and Daniel, 1981) An increasing number of educators believe that for language minority (as well as language majority) students, this limited exposure to literacy before school is likely to lead to academic problems unless instruction in the elementary grades is reconceptualized. (Adams, 1990; Goldenberg and Gallimore, 1991; Teale, 1986)

Structured Immersion

By necessity districts have begun to experiment with structured immersion programs, or "sheltered English" as it is sometimes referred to in the U.S. (Northcutt and Watson, 1986) For example, the large influx of Southeast Asian students in the 1980s and 1990s has made it extremely difficult for some schools to provide native language support for all of their eligible students because so many different language groups are represented. This is clearly one of the primary issues facing the Seattle School District in its efforts to adequately serve LEP students. Not only are qualified teachers who speak these languages unavailable and textbooks nonexistent, but in many cases there may be insufficient numbers of students who speak a specific language to warrant full-time instruction in that language.

The key difference between sheltered English and earlier forms of "sink or swim" immersion methods is that English instruction is designed to be *comprehensible* to language minority students' developing English proficiency. In other words, teachers take specific steps to modify content-area instruction so that it is comprehensible to students who are still mastering English. (Gersten, 1996; Moll and Diaz, 1986)

Description of Seattle's Educational Program for Limited-English Students

No substantive changes occurred in the Seattle Public Schools program for LEP students as a result of the lawsuit brought against them and the subsequent out-of-court settlement. It is absolutely essential to understand that the program for LEP students in Seattle does not provide native language teaching, but rather special English language instruction. Although the Seattle School District calls it a "bilingual education" program, it clearly is not. In this analysis, I will describe the program used in the Seattle School District and some of the major educational outcomes for LEP students and other students in the district. The data are drawn from the district's description and

evaluation of its program from the late 1980s to 1992, and from an evaluation by the Education Service District in 1995 (Litzenberger and Sanders, 1995), required as part of the settlement agreement.

Demographic Variables

Like many urban school districts in the country, Seattle has witnessed a veritable explosion in the number of students for whom English is not a native language. In the fall of 1970, the Seattle School District first established an official program for LEP students. The program was maintained by the Department of Foreign Languages and served about 100 students. Before 1970, students were informally served at individual schools throughout the district.

The end of the Vietnam War resulted in a tremendous increase in the number of students from Southeast Asia who entered Seattle schools. This increase of students from Southeast Asia continued through 1982 and forever changed the cultural and linguistic make-up of the Seattle School District. From 1982 to the present, the number of students for whom English is not a native language has continued to grow, but this increase is a result of immigration from many geographic regions of the world, including large sections of Asia and Latin America. By 1993, 11,117 of the district's 44,962 students (24.7 percent) spoke a non-English native language. Of these 11,117 students, 6,185 (55.6 percent) were in programs for LEP students.

One of the linguistic characteristics of students in the Seattle School District that makes the delivery of effective educational services particularly challenging is that the population of students eligible for LEP services represents a large number of native languages. This is a characteristic of many other urban districts: for example, over 100 native languages are spoken by students in the Los Angeles Unified School District alone. (Barber, 1993) What is unique to urban areas of the Pacific Northwest, including Seattle and Vancouver, is that Asian languages are more commonly spoken than is Spanish.

Latino students clearly represent the largest language minority group in the country, comprising approximately 60 percent of the overall language minority population, according to the latest report prepared by the General Accounting Office. (cited in Porter, 1995) Latino Americans are also one of the fastest growing minority groups in the country, and by the year 2020 they are projected to succeed African Americans as the single largest minority group. (U.S. Bureau of the Census, 1992; Reddy, 1993)

Many other language minority groups are enrolling in U.S. schools at an extremely rapid pace. Most of the increase is occurring in urban settings. The

Table 1
Number of Students Whose Primary Language Is Not English Who Receive Services for Limited-English Students

Primary Language	Number of Students	Number of Students Receiving LEP Services	Percentage
Vietnamese	2032	1473	72%
Chinese Languages/Dialects	1615	784	49%
Spanish	1293	823	64%
Philippine Languages/ Dialects	1136	529	47%
Cambodian	1119	693	62%
Lao Languages/Dialects	1098	600	55%
Ethiopian Languages/ Dialects	650	462	71%
Russian/Ukrainian	255	187	73%
Korean	243	111	46%
Samoan	218	110	50%
Japanese	135	45	33%
Other	1323	413	31%
Total	11,117	6185	56%

Note: By the time of the 1995 evaluation conducted by the Puget Sound Education Service District (Litzenberger, 1995), there were another approximately 100 students in programs for LEP students (n = 6279).

largest of these non-Spanish language groups speak various Asian languages and dialects. The diversity of language and cultural groups represents challenges for public schools that are two-fold: securing a teaching and support staff that speaks the languages of the students in the district and ensuring that educators are sensitive to the ways in which cultural and language diversity influence learning.

Over 78 major native languages and dialects are spoken by students in the Seattle School District. Table 1 identifies the 11 most common of these languages and dialects. These 11 language groups represent 88 percent of the students in the district whose primary language is not English, and 93.3 percent of the students in the district who are in programs for LEP students.

An additional 1,323 students in the district speak a primary language that is neither English nor one of the 11 most common non-English languages in the

district. These students represent another 67 native language groups, which on average is about 20 students per language. Not all of these 67 languages are equally represented in the district, of course. Consequently, the Seattle School District, in addition to having a bilingual staff capable of speaking the 11 most common languages in the district (see Table 1), provides some native language support in at least 4 additional languages. Further support is provided on the basis of changing student need. Overall, the Seattle School District employs a staff of approximately 230 certified teachers and instructional assistants to serve LEP students.

Eligibility for LEP Programs

Students are eligible for programs for LEP students if they meet the following criteria: 1) their native language must be something other than English; and 2) they must earn a score of 1, 2, or 3 on the Language Assessment Scales (LAS) (DeAvila and Duncan, 1977), a nationally normed test of language proficiency that is commonly used to make decisions regarding student eligibility for programs for LEP students. Students whose raw scores translate into a category of 1 or 2 are described as being non-English speakers; students whose scores translate into a 3 are described as being limited-English proficient. Categories 4 and 5 are described as English proficient.

The LAS includes five subtests. On the pairs subtest, students are asked to choose whether or not two orally presented words sound the same (e.g., them/them; then/den). On the lexical subtest, students are required to produce the correct word for line drawings presented on cards. On the phoneme subtest, students repeat words and sentences the examiner presents orally, and are evaluated on how accurately they produce specific phonemes in the selection (e.g., The *y*ard is *y*ellow). On the comprehension subtest, students point to one of three pictures that correctly matches a sentence presented on tape. On the production subtest, students are required to reproduce verbally a short story presented on tape.

The LAS production subtest is heavily weighted in determining a student's final category score. Thus, students may do relatively well on the first four subtests but not very well on the story retell subtest, and earn an overall language proficiency score of 1, 2, or 3. Especially for younger children, the test situation may make it difficult for them to do their best in retelling the story. Consequently, their actual English language skills may be stronger than they demonstrate on the LAS.

Formal Criteria for Exiting Programs for Limited-English Students

The criteria used for determining when students no longer need services for LEP students are based on a different framework than are eligibility criteria.

Student performance on a scholastic achievement test is used to determine if students are adequately prepared for full-time English language instruction in a mainstream classroom. Each spring, all students in the district take the California Achievement Test (CAT) (CTB/McGraw-Hill, 1985), a group administered, nationally norm-referenced test of academic achievement.

The CAT is used to assess skill development for students in grades kindergarten through 12, in reading, spelling, language, mathematics, study skills, science, and social studies. (Salvia and Ysseldyke, 1988) The district considers the reading and language scores as the most important indicators of whether LEP students are ready for mainstream English language classrooms.

Students are typically exited from programs for LEP students if they perform at or above the thirty-fifth percentile. The use of this cutoff score can be problematic. For example, standard interpretations of average achievement levels frequently include children whose performance is between the twenty-fifth and seventy-fifth percentiles. Sometimes one standard deviation above and below the mean is used as a descriptor of average performance. In this case, percentile scores between 16 and 84 would be considered within the overall average range.

Included in almost any definition of "average" would be performance at the thirty-fifth percentile. In other words, within the parameters of the normal distribution, many native English-speaking students who score at, above, or even below the thirty-fifth percentile would be considered at least average achievers. English-speaking students clearly do not need special programs designed for LEP students to meet their basic academic needs, and depending on typical achievement levels in their school and district, the academic skills of students at the thirty-fifth percentile may be better than most of their peers.

Seattle is not unusual, of course, in using a rigorous interpretation of average. For example, in New York City, students exit bilingual education programs when they score at or above the fortieth percentile on the Language Assessment Battery, an English proficiency test developed and normed in New York City. (Mujica, 1995) One of the consequences of this percentile cutoff is that a high percentage of LEP students in New York City spend many years in bilingual education programs.

Trial Criteria for Exiting Programs for Limited-English Students

One of the serious indictments against bilingual education is that students enter programs easily but do not exit easily. In many cases, students may receive bilingual education services for six years or more. (Cubillos, 1988) This seems to contradict what has always been one of the major tenets of

programs for LEP students: students are prepared for successful performance in English language classrooms as quickly as possible. (Stewner-Manzanares, 1988) A similar criticism has been leveled against special education. Many educators believe that one of the primary reasons behind the intensity of the full-inclusion movement is how seldom students return to the general education settings once they have entered special education.

The Seattle School District has instituted a trial exit procedure for students whom district personnel believe will perform successfully in the mainstream, but who have not achieved a score of at least the thirty-fifth percentile in Total Reading and Total Language on the CAT. This process begins with a review of such a student's academic progress reports and report cards by the teacher trained to work with LEP students. A discussion follows between this teacher and the general education teacher about the possibility of a successful mainstreaming experience for the target student. If there is sufficient evidence to suggest that the target student will be successful in the English-language classroom, and the two teachers reach an agreement on a basic transition plan, a trial reintegration occurs for one year.

During the trial reintegration, the student may still receive some native language support from a bilingual instructional assistant on an as-needed basis. At the end of the school year, the student's performance on the reading and language portions of the CAT are examined. If the student is performing at or above the thirty-fifth percentile, services are terminated; if the student's performance is still below the thirty-fifth percentile, performance data from the general education classroom is examined more thoroughly. If the student is achieving at approximately grade level, the student's parents and teachers discuss the termination of services; if the student is not achieving at grade level, the parents and teachers discuss what additional services are needed to help the student learn what is necessary to achieve successfully in the mainstream.

This trial exiting process has merit for a number of reasons. First, it recognizes that some students may perform below the thirty-fifth percentile on the CAT for reasons other than lack of experience with English. Second, it gives educators who know the child an opportunity to discuss the child's educational needs in very specific terms. Third, it delegates important responsibility for determining appropriate educational services to those who know the child best, the teachers trained and certified to work with LEP students. Fourth, it allows student performance to be measured by criteria that take into account overall academic success and that are related to student self-esteem and motivation to do well in school. It asks two fundamentally important questions: "How is the student doing in the general education classroom on

everyday assignments and tasks?" and, "Is the student performing at grade level?" Finally, the process is evaluated after a year, both narrowly in terms of student CAT scores, and more inclusively, in terms of how well the student performs classroom tasks and assignments. At that point, the program can be changed or modified to best meet the student's needs.

COMPONENTS OF SEATTLE'S PROGRAM FOR LIMITED-ENGLISH STUDENTS

The Seattle School District uses a flexible combination of service delivery models to meet the needs of their LEP students. The sequence of these models is designed to address the language and academic needs of LEP students, to provide parents with options concerning instructional programs for their children, and to enhance school flexibility in tailoring specific programs to the needs of students and the strengths of staff members. Following is a description of the major service components.

Bilingual Orientation Centers

Students who have recently arrived in the United States or who are new to the Seattle School District typically attend one of five Bilingual Orientation Centers (BOC) to help prepare them for the regular programs for LEP students. Students typically stay in one of the BOCs until the end of the semester in which they arrive. Some students remain until the end of the next full semester, however, if it is determined that this will better prepare them for one of the schools with a program for LEP students. The purpose of the BOC is to prepare students as quickly as possible for success in a program for LEP students provided in a neighborhood or a nearby school.

Preparation in the BOC involves two broad components. First, students are provided with intensive ESL instruction. Whenever possible, trained paraprofessionals provide primary language support to aid English language acquisition and to allow students to continue to make progress in general content knowledge while they are learning English. The second component focuses on helping students who may be unfamiliar with schooling in the U.S. generally, or with the Seattle schools specifically, for it is often the case that recent immigrants only attended school sporadically in their native countries. These students learn about, and experience first hand, various aspects of the ways in which schools function in Seattle and the U.S.

Schools with Programs for Limited-English Students

Prior to 1994–1995, programs for LEP students were offered at 17 of 34 elementary schools, 9 of 11 middle schools, and all 11 of the high schools. In

1994–1995, the district expanded programs for LEP students to the remaining elementary schools. The first major feature of programs for LEP students is ESL instruction—special classes designed to improve students' listening, speaking, reading and writing skills in English, and content area instruction focusing on math, social studies, science and health, and delivered in English and the students' native language. Content area instruction parallels that which is offered in the general education classroom. Aside from their time in these special classes, LEP students remain in the general education classroom throughout the day. Instructional assistants may be assigned to these classes to provide primary language support. In general, primary language support and instruction are provided by bilingual instructional assistants under the supervision of general education and ESL teachers. Many of the general and ESL teachers are also fluent in languages other than English and provide native language support to their LEP students.

Various service delivery models characterize programs for LEP students. Overall, however, traditional ESL pull-out models (see below) have given way to more integrated approaches in which eligible students are served by certified staff in the general education classroom. Many schools in the Seattle School District use a combination of models, which allows those students who have more limited skills or who have missed significant years of schooling to receive additional support in a more traditional pull-out setting.

Each school determines the type of model it will develop and employ, using district guidelines as parameters. There are five primary models in the Seattle School District program for LEP students. Schools are encouraged to be flexible in how they use existing models or combine them in ways that make the most sense given the needs of their students. These models are briefly described.

Pull-Out Model

Students are assigned to a mainstream classroom and are "pulled-out" to the ESL classroom for English language instruction. These pull-out times vary according to the needs of the students and scheduling issues in the school. Overall, these pull-out classes last 30–60 minutes and serve groups ranging from 5–12 students.

Pull-In Model

The staff trained to work with LEP students is "pulled-in" to the mainstream classroom to serve LEP students. Such a staff member is frequently a bilingual Instructional Assistant who has been trained by the certified teacher and is fluent in the student's native language. Certified teachers trained to work

with LEP students also frequently provide services in the general education classroom. This integrated service provides a good opportunity for LEP students to learn English that is most directly relevant to the content of the general education classroom.

Basic Skills Block
Students are pulled into a basic skills block on a school-wide basis. Besides ESL instruction, basic reading instruction is provided by the teacher certified to work with LEP students. In this model, service is typically delivered for approximately 2 hours per day. Class sizes average between 15 and 24 students. Many native English-speaking students participate in the basic skills block as well.

Blended Model
Students are served in "blended" groups, which may include students officially in programs for LEP students, special education, Title 1, or served only in general education. Various combinations of staffing patterns may be used to deliver instruction, depending on the content and the students in the class. Typically, however, blended classrooms are team taught and the class sizes are reduced.

Tutorial Model
LEP students are tutored on an hourly basis by trained tutors who are usually fluent in the student's native language. LEP students who choose not to attend one of the traditional center schools with programs for LEP students are provided with tutors. In the typical tutoring model, students remain in their general education classrooms and tutors come in on a part-time basis to work with them. Each LEP student receives direct tutorial service for up to 3 hours per week. During the 1992–1993 school year, 39 tutors served 482 children in 42 schools. Native language support was provided for 20 different language groups.

DATA ON THE EFFECTS OF PROGRAMS FOR LIMITED-ENGLISH STUDENTS

Academic Achievement Data

Achievement data on the effectiveness of the Seattle School District in educating LEP students will be presented at two levels of analysis. First, district data on the performance of students in programs for LEP students are examined: data are available for the spring semesters of 1991 and 1992, and of 1994 and 1995. In each successive year, data on the same group of students are reported. Thus, analysis allows for interpretation of how well language mi-

nority students perform at two distinct times (e.g., spring 1991 and spring 1992), but, more importantly perhaps, it allows for an examination of the degree of progress these students made from one year to the next.

This performance across years for a single group of students represents the second level of analysis. These pictures of individual student growth are extremely important in determining how well a district is meeting the needs of students still enrolled in programs for LEP students as well as the needs of students who have "exited" from these programs. These "growth" data are reported for LEP students as well as for native English-speaking students in the district.

The 1991 and 1992 data are from an evaluation of programs for LEP students conducted by the Seattle School District. Data from an independent evaluation of the programs for LEP students conducted by the Puget Sound Educational Service District, in August 1995, will be used to report on student achievement in 1994 and 1995. (Litzenberger and Sanders, 1995) This evaluation was conducted as part of the settlement agreement of the lawsuit filed on behalf of LEP students in the district. This evaluation includes an in-depth examination of specific aspects of the programs for LEP students. Also, a few relevant comparisons between 1991–1992 and 1994–1995 will be made to provide a "general" index of the trend in student performance over the years.

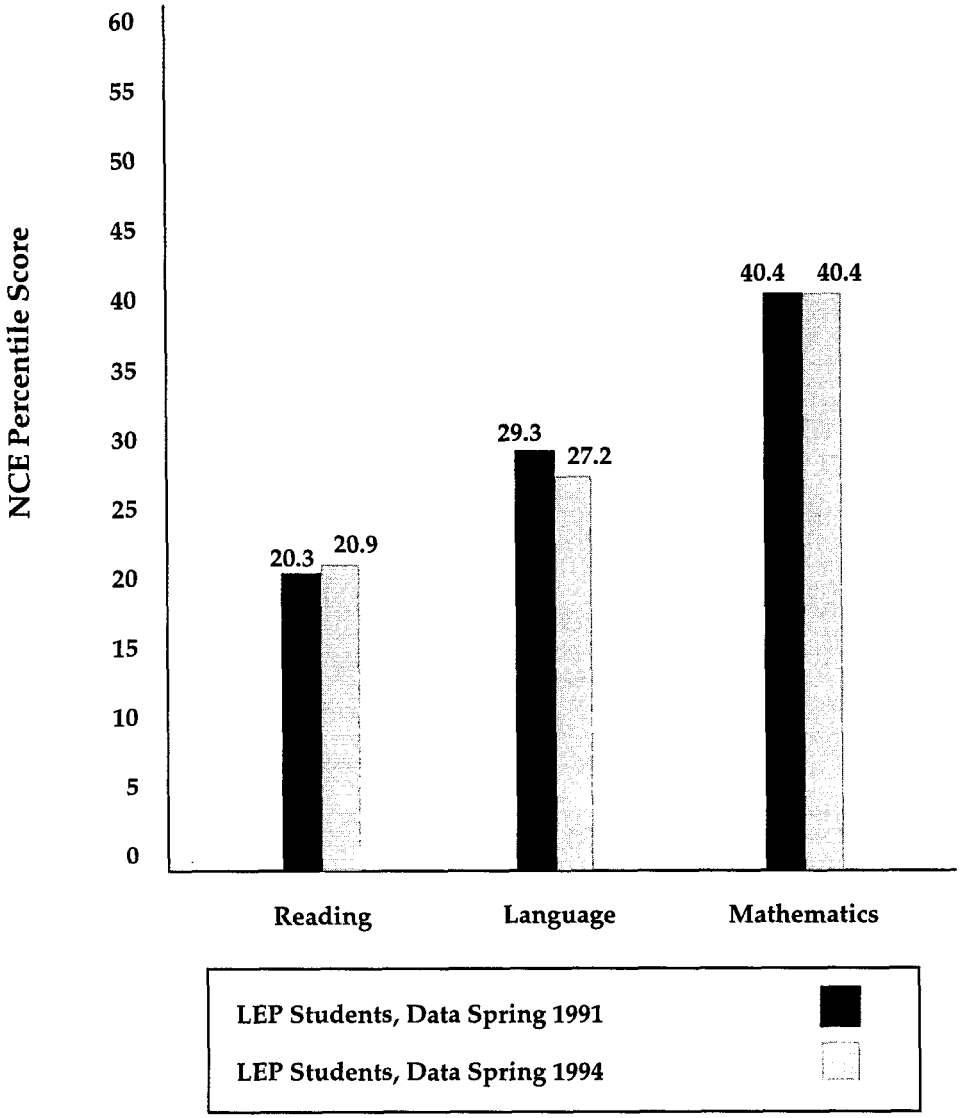
Achievement Comparisons: 1991–1992 and 1994–1995

Figure 1 shows the academic performance of all students in programs for LEP students in the Seattle School District in the spring of 1991, and of all students in programs for LEP students in the spring of 1994. The figure shows the consistency of student performance in two different years. Not surprisingly, overall student performance was highest in mathematics and lowest in reading. Approximately 20 NCE (normal curve equivalent) percentile points separated math and reading scores for students in programs for LEP students in both 1991 and 1994.

A high degree of performance consistency in 1991 and 1994 is true in all three major subject areas. Overall, the figure also shows that students in programs for LEP students are performing in the bottom two quartiles compared to a national sample of students of the same age and grade level. Given the importance of reading in overall academic success (Adams, 1990), it is important to note that reading scores are in the bottom quartile compared to a national sample of students.

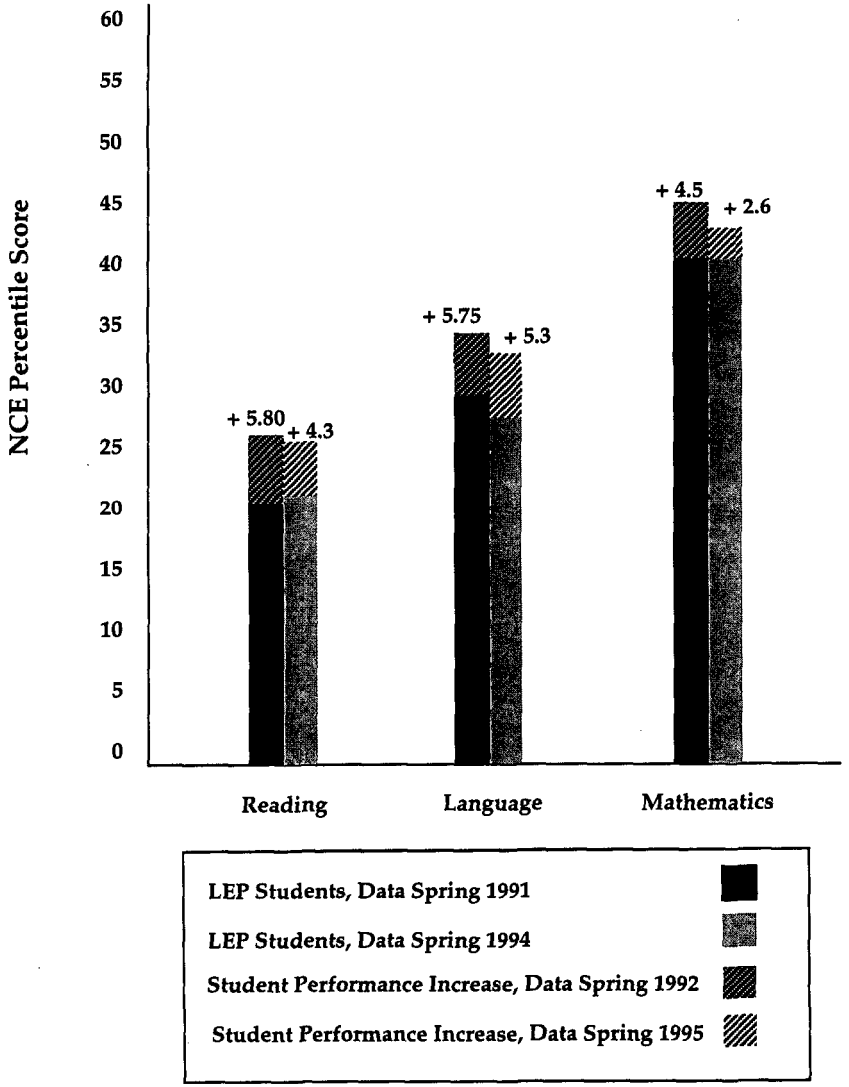
The performance of students in programs for LEP students compared to native English-speaking students is understandably lower on tests in English,

Figure 1
CAT Achievement Data for Students in Programs for LEP Students: 1991 and 1994



especially on reading tests. One of the reasons students are in programs for LEP students is because they are still in the process of learning the foundational components of the English language. In this context, individual measures of students' growth over time are perhaps more important indicators of successful programs for LEP students than are measures taken at a single point in time and analyzed solely in relation to the performance of native English-speaking students.

Figure 2
CAT Achievement Data for Students in Programs for LEP Students: 1991–1992 versus 1994–1995



An essential question not addressed in Figure 1 is how much growth students make over time; in Figure 2, individual student growth from 1991 to 1992, and from 1994 to 1995, is represented. In other words, the performance of the same group of students in each of the two successive years is depicted. For example, the performance of the same group of students in programs for LEP students from 1991 to 1992 increased an average of 5.35 percentile points on an NCE scale.

Overall, Figure 2 shows that in both 1992 and 1995, student performance increased over the previous year. Even with the performance increases, however, students still scored in the bottom two quartiles. For example, the average performance of students in programs for LEP students on the CAT reading tests was at about the twentieth percentile in 1991. In 1992, those same students had an average score that placed them at about the twenty-sixth percentile.

The lowest growth occurred in mathematics from 1994–1995. Overall, however, students in programs for LEP students had their highest scores at a single point in time on the mathematics tests. It is reasonable that they might demonstrate higher growth rates in reading and language than in mathematics, where, in effect, there is "more room for growth." However, even in mathematics, where student performance is approaching the fiftieth percentile, meaningful growth occurred.

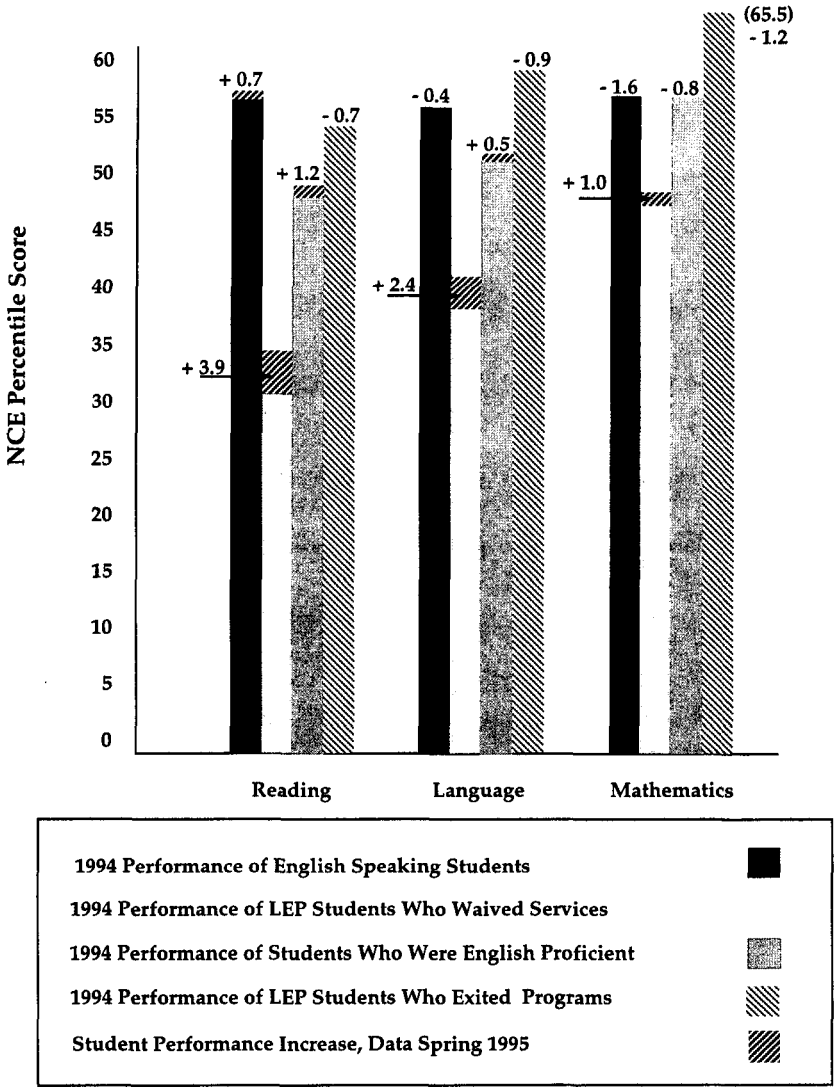
In summary, students in programs for LEP students increased in their NCE scores compared to a national sample. Except for student mathematics growth from 1994 to 1995, the gains appear to be similar across years and subject areas. Average growth gains in a normative context can be expected to be around zero, because an individual student's performance is represented in relation to other students. In other words, on average, a seventh-grade student who performs at the fiftieth percentile compared to other seventh graders could be expected to perform at the fiftieth percentile compared to other eighth graders one year later. This would represent a normative change of 0 NCE points, and average growth for students moving from the seventh to the eighth grade.

Consequently, students in programs for LEP students who are making yearly NCE growth gains of between 4 and 5 percentile points are making growth above and beyond what might be considered average growth. If students continued to make this kind of growth from year to year, they would quickly be at the fiftieth percentile. However, growth increases are not linear. Earlier in skill development, rapid growth is more likely than it is later in skill development, when growth indicators are usually less dramatic. This means that when students are provided with effective reading instruction they can be expected to make faster reading progress early in the reading acquisition phases. Given the same degree of effective reading instruction, growth rates level off as students begin to develop greater reading proficiency, and progress may be demonstrated in ways that are more subtle and difficult to observe.

Growth among Different Groups of Students

What is not clear from Figures 1 and 2 is how the growth of students in programs for LEP students compares to the growth of other students in the dis-

Figure 3
CAT Achievement Data for Students in Programs for LEP Students by Language and Program Status



trict. Figure 3 shows the growth rates from 1994 to 1995 of four groups of students. A comparison of these rates with the rates in Figures 1 and 2 can point to important factors regarding the effectiveness of programs for LEP students in the Seattle School District.

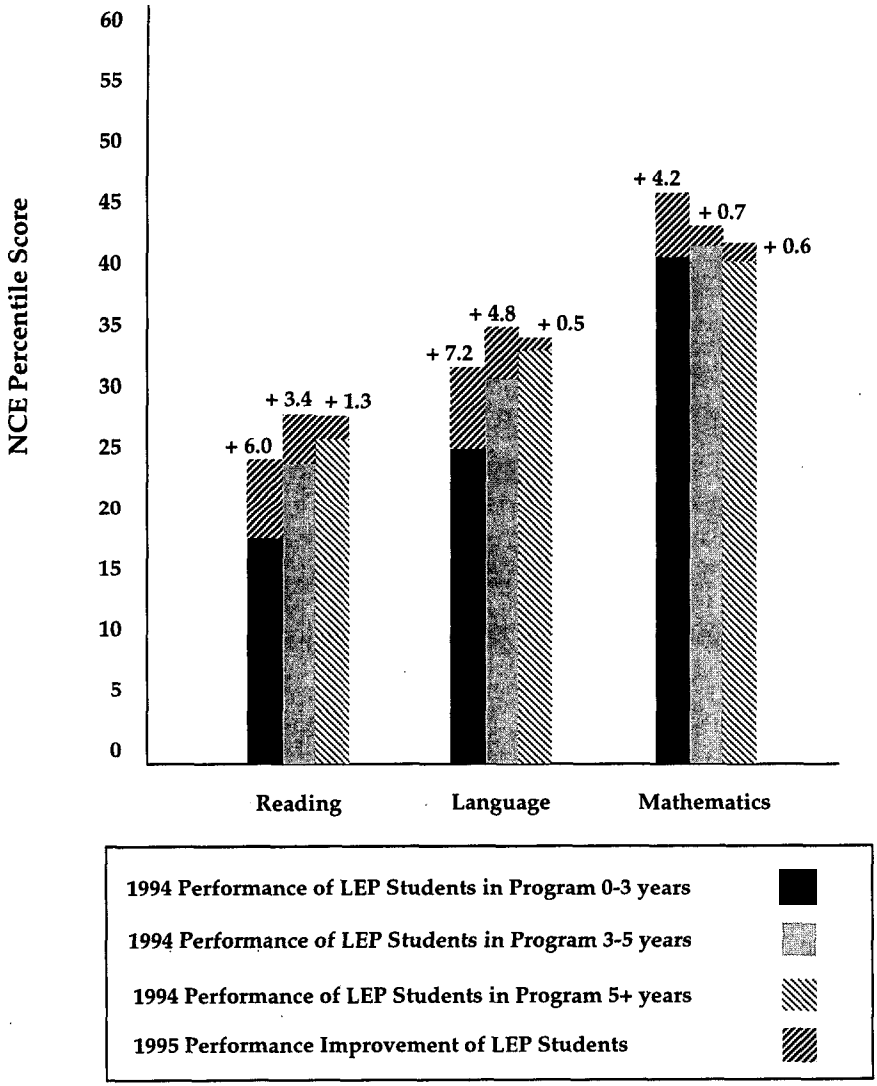
One of the groups represents the performance of monolingual English-speaking students (n = 36,809). The three other groups are students for whom En-

glish is not their primary language, but who are not in programs for LEP students. The first of these groups were students eligible for programs for LEP students but whose parents declined services (n = 773). The second were students who had a non-English native language but who did not qualify for programs for LEP students because their test scores reflected proficiency in English (n = 799). A final group was made up of students who were in programs for LEP students and exited from these programs, either because they scored above the thirty-fifth percentile on the CAT, or because they were successful in the trial procedure (described above) (n = 799).

The stability of scores on the CAT for native English-speaking students is evident. In all three subject areas, performance is at or near the fifty-fifth percentile, and in two of three subjects, the change from one year to the next is less than 1 percentile point. One of the most interesting comparisons is between native English-speaking students and students who had exited from programs for LEP students, both in terms of the differences between these groups at the end of each year, and also in their change in performance from one year to the next. In two of three subjects, students who had successfully exited programs for LEP students scored higher overall than did native English-speaking students. In reading, the one subject in which students who had exited from programs for LEP students performed lower than native English-speaking students, their performance was still at the fiftieth percentile. These data strongly suggest that students who exit programs for LEP students have attained academic skills that are very similar to those of native English-speaking students.

It is also interesting to look at the performance of students with a native language other than English, but whose parents declined programs for LEP students and chose instead to have their children instructed full-time in the general education classroom. In all three subject areas—reading, language, and mathematics—these students had the lowest percentile scores of the four student groups, but made the greatest gains from 1994 to 1995. However, their performance increases from 1994 to 1995 were less than the increases that occurred for students who were in programs for LEP students from 1991 to 1992 or from 1994 to 1995 (see Figure 2). The increases for students in programs for LEP students were 5.8, 5.75, and 4.5 NCE points in reading, language, and mathematics respectively, from 1991 to 1992. The corresponding 1994 to 1995 gains were 4.3, 5.3, and 2.6 NCE points. For students who waived programs for LEP students, the gains in reading, language, and mathematics were 3.9, 2.4, and 1.0 NCE points respectively. In other words, it appears that programs for LEP students are effective in helping these students acquire English academic skills. Students who are eligible for those services and waive them may make less academic growth than they might otherwise.

Figure 4
CAT Achievement Data for Students in Programs for LEP Students by Length of Program Participation



However, these comparisons must be made very cautiously for at least two important reasons. First, students whose parents waive programs for LEP students may represent a very different group of students than students whose parents choose to have their children in programs for LEP students. Second, the groups of students appear to be slightly different in the three subject areas in the first year of the comparison scores: students whose parents waived programs for LEP students have somewhat higher scores than students in

programs for LEP students. In terms of firm conclusions, the more different these groups are at the outset of the comparison, the more difficult it is to draw conclusions about program effectiveness. The data and comparisons do provide some evidence, however, that programs for LEP students are more effective in helping students acquire English academic skills more quickly than they would following other options.

Performance and Duration in Program

One of the tenets of programs for LEP students is that they should help students develop the proficiency they need to be successful in English language classrooms. The logic is quite straightforward. Students who have difficulty with English may need special instructional support in order to learn English and to master the academic content necessary to meet grade level expectations. Their growth in English and content material will increase more rapidly the sooner they can function independently in English language classrooms. Thus, most programs for LEP students are designed to last three to four years.

Figure 4 shows the performance of students in programs for LEP students in relation to the length of time students have been in these programs. As expected, students who have been in programs for LEP students fewer than three years score lower overall than do students who have been in programs for longer periods of time, except in mathematics, where the performance of all three groups is roughly equal. Students who have been in programs for LEP students 0 to 3 years, however, made larger gains than any other group from one year to the next. This increase is in line with some of the previous findings described above, in which the performance of students who had the lowest actual scores frequently made the largest one-year increases in performance.

The second highest rate of growth occurred for those who had been in programs for LEP students for 3 to 5 years. The growth these students made was particularly apparent in reading and language. For students in programs for LEP students for more than 5 years, the amount of growth dropped off appreciably. These students made gains that were about 1 percentile point above average in reading, and less than 1 percentile point in language.

It is important to consider what the rate of growth means over time for students who have been in programs for LEP students for more than 5 years. Given their level of performance—around the twenty-fifth percentile in reading and around the thirty-second percentile in language—and low rate of growth, it may be that repeated enrollment in programs for LEP students is not likely to result in grade level performance (which in the district is around

the fiftieth percentile) in a timely manner. The district should perhaps consider transitioning these students into full-time English language classrooms and providing more intensive academic support services than might typically be provided to native English-speaking students.

Academic Achievement by Grade

Data from the evaluation of New York City's bilingual education program indicated that the earlier students began their schooling in a special program for LEP students, the fewer years it took them to be transitioned into full-time English language classrooms. New York City uses two types of programs for their LEP students. Most students are in a program in which the bulk of their instruction in the first years of school is given in the student's native language. Other students are in a program that uses controlled English and a special curriculum aimed at achieving a rapid acquisition of English. Mujica (1995) reported exit data each year for three years for LEP students in these two programs from kindergarten through grade 9. Data for selected grades are reported in Table 2.

A consistent pattern was found in which the later LEP students entered either type of program the less likely they were to exit those programs within three years. For example, 51.5 percent of children who entered a primarily native language program in kindergarten made the transition into full-time English language classrooms within three years. In contrast, only 8.4 percent of students who entered a native language program in ninth grade made the transition into full-time English language classrooms within three years. The other clear pattern in Table 2 is that students in the controlled English programs made more rapid transitions into the regular classroom than did students who were in primarily native language classrooms. This was true at each grade level.

Achievement data from the Seattle School District may help explain the longer transition times for students who entered programs for LEP students in the later grades. Figures 5, 6, and 7 show performance data for LEP students and other students in the district in 1991 and 1992 at elementary, middle, and high school levels. At all three levels, students in programs for LEP students scored higher in mathematics than in language, and higher in language than in reading. This pattern is generally true for other students in the district as well.

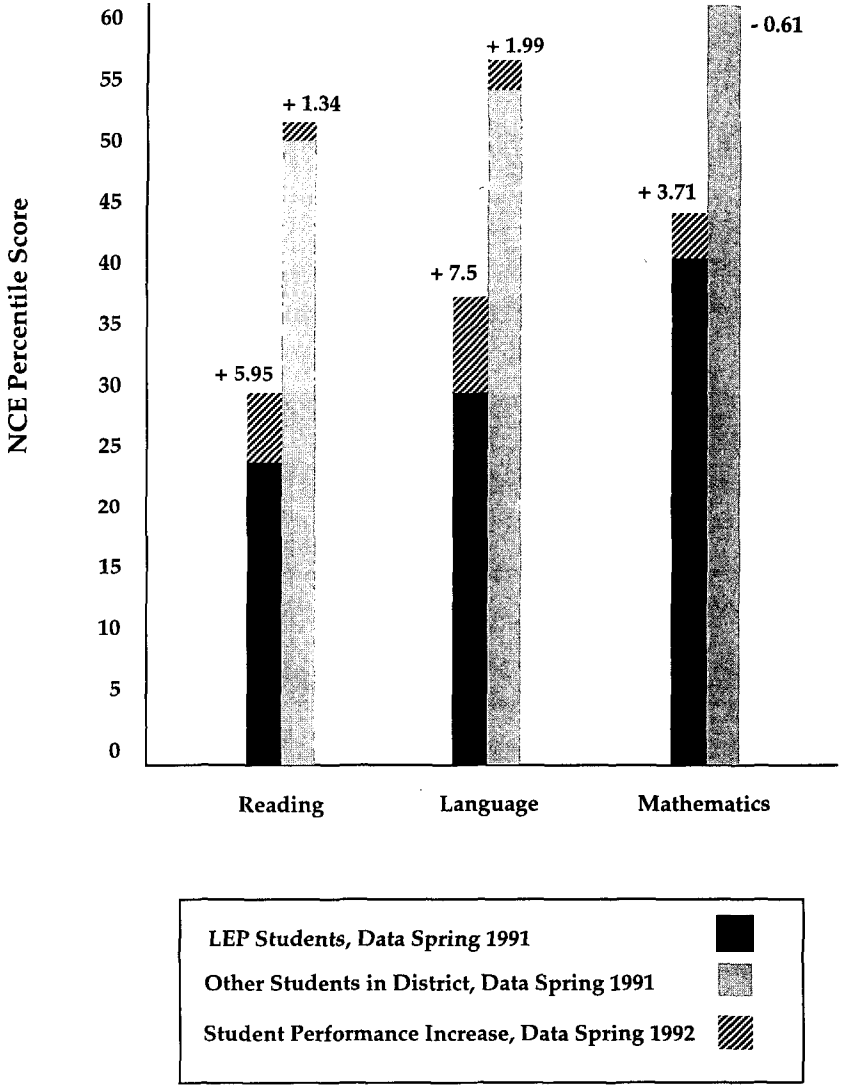
The normative gains for the native English-speaking students are relatively small from one year to the next, which is to be expected if students are keeping pace with their peers. The pattern is different for students in programs for

Table 2
The Percentage of LEP Students Who Exited Native Language and English as a Second Language Programs in New York City within Three Years in Relation to Grade Entrance

Native Language Program	
Year of Entrance into Native Language Program	**Percent Who Exit Program within Three Years**
Kindergarten	51.5
Grade 1	38.5
Grade 2	22.1
Grade 3	21.9
Grade 6	6.9
Grade 9	8.4
English-as-a-Second Language Program	
Year of Entrance into ESL Program	**Percent Who Exit Program within Three Years**
Kindergarten	79.3
Grade 1	72.9
Grade 2	67.5
Grade 3	59.2
Grade 6	32.7
Grade 9	21.9

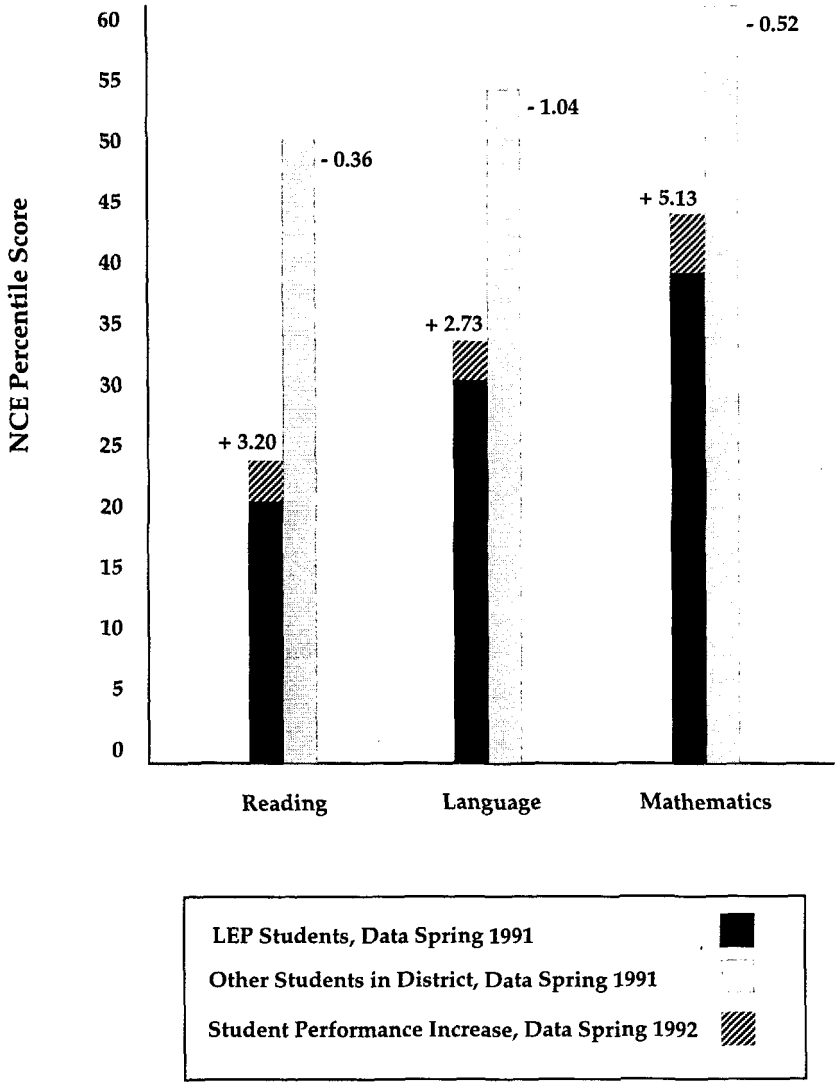
LEP students. In all three subject areas, students made progress above and beyond normative growth rates at the elementary, middle, and high school levels. The highest gains in reading and language, however, occurred in the elementary grades. *One of the reasons this is an important point is that it represents a different pattern than was displayed in previous figures, in which students with lower overall scores made the greatest one-year gains.* For elementary, middle, and high school students in the Seattle School District, the reverse was sometimes true. Students in programs for LEP students in elementary school had higher overall NCE scores in reading and language in 1991 than did those in middle school and in high school. Elementary students also made greater gains than did middle school and high school students in 1992. These data suggest that, at least in reading and language, students benefit from entering programs for LEP students early in their academic lives.

Figure 5
CAT Achievement Data for Elementary School Students in Programs for LEP Students Compared to Other Students in the District



A different pattern emerges in mathematics for the elementary, middle, and high school students in programs for LEP students. The level of student performance is about the same in 1991 (around the fortieth percentile), but the rate of growth is very different among the groups in 1992. Students in the elementary grades make the least amount of growth (3.71 NCE points), and students in high school make the most growth (8.32). This is difficult to interpret, but it may be that the discrepancy between

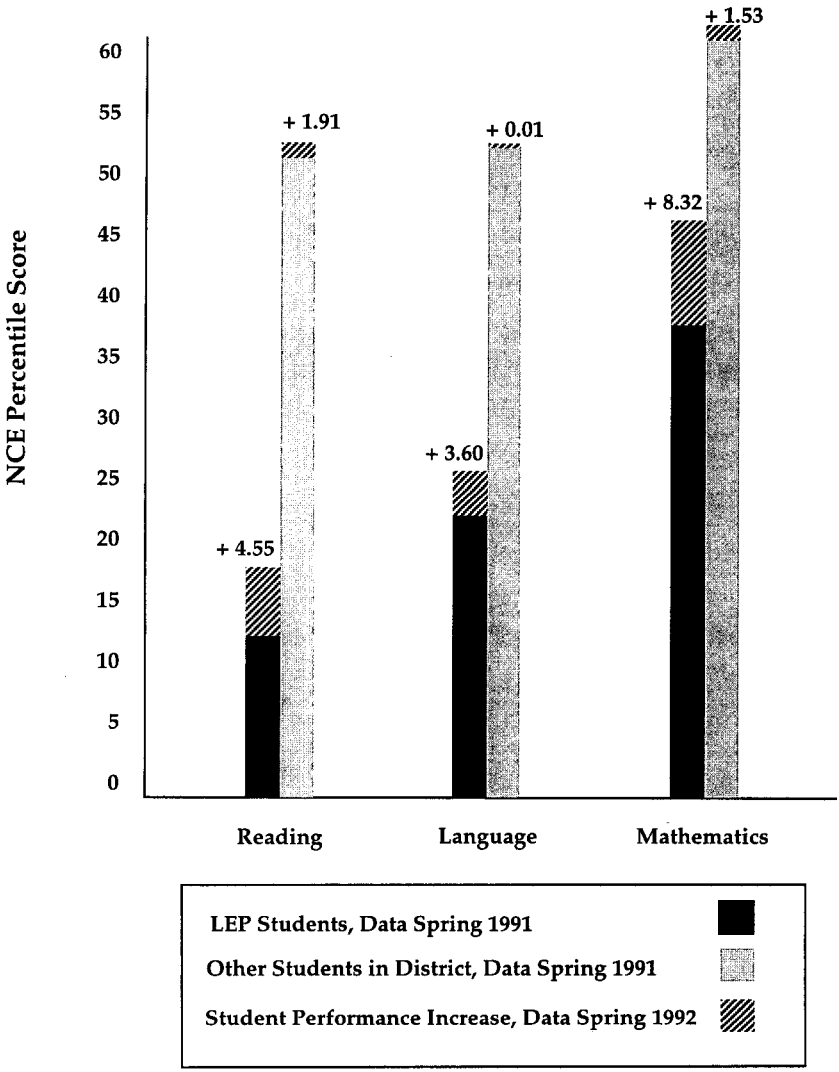
Figure 6
CAT Achievement Data for Middle School Students in Programs for LEP Students Compared to Other Students in the District



actual math knowledge and math performance (e.g., CAT scores) is great for older LEP students, especially in the early stages of learning English. The amount of English that LEP students learn in the initial years of programs for LEP students may allow them to better demonstrate the mathematics knowledge they do have, but it is insufficient for them to demonstrate the types of reading gains typical of students in the lower grades.

Figure 7

CAT Achievement Data for High School LEP Students Compared to Other Students in District



Student Dropout Rates

An important indication of a successful school program is the extent to which students stay in school. A great deal has been written about the high dropout rate of minority students. (Rumberger, 1983; 1995) The dropout rate for Hispanics, in particular, has remained alarmingly high for decades.

Overall, compared to African American students and white students, Hispanic students leave school earlier, are less likely to complete high school,

and are less likely to enter college. (Alva and Padilla, 1995; Rumberger, 1983; 1995) The average school dropout rate for Hispanic students (49 percent) is much higher than the dropout rate for white students (23 percent) or African Americans (37 percent). (Gersten and Woodward, 1994; Rumberger, 1995) This trend has been in effect for many years. In 1988, approximately 31 percent of all 18- to 19-year-old Hispanics had left school without a diploma. This rate was more than 1.5 times the rate of black students (18 percent) and more than double the rate of white students (14.3 percent). Districts with a majority of Hispanic students report dropout rates as high as 50 percent, and occasionally dropout rates of over 70 percent are reported in major urban areas. (Arias, 1986; Casas, Furling, Solberg, and Carranza, 1990)

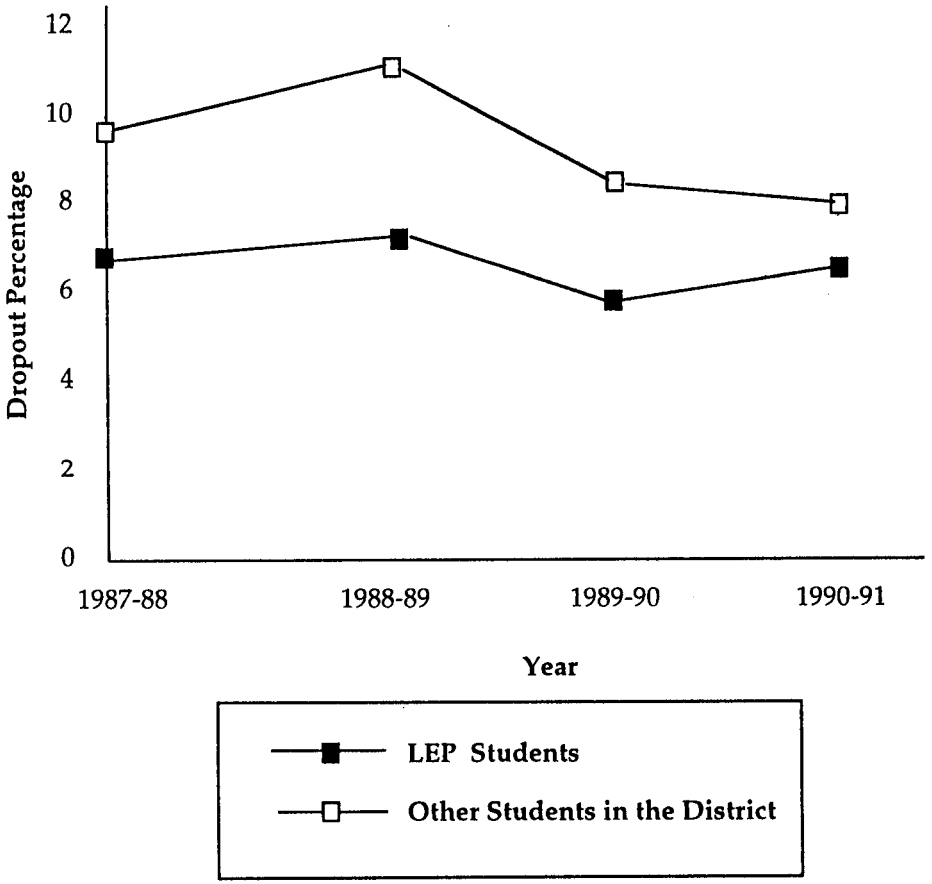
Even when controlling for possible mediating variables, like socioeconomic status, Rumberger (1983) estimated that Hispanic students drop out of school at a rate at least 1.5 times greater than their white counterparts. Hispanic students tend to report reasons similar to those of other students for dropping out of school, but they report them more frequently.

Asian American students typically do not have dropout rates that are as high as other minority students. In a recent study of dropping out of middle school, Rumberger (1995) found that African American, Hispanic, and Native American eighth-grade students had significantly higher odds of dropping out of school than did other students. By far, Asian students had the lowest chance of dropping out of school. Rumberger states that this finding is consistent with virtually all previous research and statistical reports on the subject.

Rumberger identified two process variables that mediated the effects of ethnicity and race in predicting middle school dropout rates: the number of times a student has been held back at least one grade in school, and the level of academic expectations students had for themselves. It is reasonable to expect that students in programs for LEP students might have higher degrees of these at-risk factors than other students. Their documented achievement difficulties (at least in English) are likely to influence the perceptions they have of their academic abilities, as well as the perceptions educators have, thereby increasing the likelihood of their being held back a grade at some time in their school lives.

Data for the Seattle Public Schools present a picture different than is typical of the dropout rates of many urban school districts and what might be expected given Rumberger's (1995) findings. Students in programs for LEP students actually have lower dropout rates than the district average. Data were collected on school dropout rates from 1987–1988 to 1990–1991. Each year, students enrolled in programs for LEP students had a lower dropout rate

Figure 8
Seattle School District Dropout Rates for Students in Programs for LEP Students and Other Students in the District



than the district average. The pattern is illustrated in Figure 8. Overall, the dropout rates are low for students in programs for LEP students as well as for students across the district. However, the dropout rate never rises above 8 percent for students in programs for LEP students and only once dips below 8 percent for other students in the district.

Graduation Rates

A related measure of program effectiveness is the extent to which student performance and learning over time culminate in the attainment of a high school diploma. An examination of the number of students who graduate on or before their expected graduation date reveals that those students who have

successfully completed programs for LEP students seem to be doing very well compared to other students in the district. However, for students still enrolled in programs for LEP students in high school, graduation prospects are considerably less than the district average.

Overall, district graduation rates are considerably above the graduation rates of students enrolled in programs for LEP students. For example, for all students who had an expected graduation date of 1990–1991, 79 percent (n = 1,954) actually graduated. For students enrolled in programs for LEP students, the rate for the same year was 62 percent (n = 168). For 1991–1992, the graduation rate was 73.5 percent for the district (n = 1849) and 45.7 percent (n = 213) for students in programs for LEP students.

A very different perspective emerges, however, when the graduation rates for students who successfully exited from programs for LEP students are considered. For example, of the students who had successfully exited from programs for LEP students and were scheduled to graduate in 1993, 81 percent actually graduated. This figure compares favorably to the yearly district averages.

The data suggest that for LEP students, an important factor of overall school success is successful completion of the special English language programs. District data from 1991 and 1992 indicated that students who had not yet exited from programs for LEP students had graduation rates that were noticeably lower than the district as a whole. However, these data should be interpreted cautiously because of other factors associated with students who are enrolled in programs for LEP students in high school, including recent immigration to the United States, frequently interrupted patterns of school attendance, and overall low levels of academic achievement. The fact that students who complete programs for LEP students and exit them, having gained a knowledge of English necessary to perform successfully in the mainstream classrooms, are graduating at high rates strongly indicates that the Seattle programs for LEP students are amply meeting the challenge of preparing students for successful academic experiences and high school graduation.

PERCEPTIONS OF THE PROGRAMS FOR LIMITED-ENGLISH STUDENTS

The Puget Sound Educational Service District (Litzenberger and Sanders, 1995) administered a survey to students, parents, and staff to gather information about their perceptions of the programs for LEP students.

Student Survey

Of students in programs for LEP students, 1,523 (chosen at random) of 4,96((31 percent) were administered the survey in English, with at least 35 stu dents represented from each grade. All language groups were represented The surveys were administered at school with assistance provided by th classroom teacher, if necessary.

One series of questions asked students about their perceptions of the effec tiveness of the programs and practices at their school. Overall, students wer quite positive about the programs. For example, 87 percent indicated tha their teachers were helping them to learn English, and 93 percent of the stu dents said that teachers provided help and assistance when needed. Studen were not as sure that the school work was at the right level for them: 64 per cent of them reported that school work was at the correct level; 25 percent too difficult; and 22 percent, boring.

Students also had a favorable attitude about the school climate: 77 percen indicated that they enjoyed coming to school, 75 percent said that school rule were clear, and 92 percent said that there were fun things to do at school. O the other hand, 40 percent of students said that racial name-calling goes on their school.

Parent Survey

All parents who had a child in a program for LEP students were mailed survey about the LEP programs. Return rates varied, from a low of 17 percen for parents whose first language was Russian to 68 percent for parents whos first language was Vietnamese. Parents were asked for their perceptions c the effectiveness of the programs for LEP students. Seventy-two percent ha a child attending a school with a program for LEP students, and 28 percen had a child receiving tutorial help in the native language at a noncenter schoc Overall, parents were very positive about the programs for LEP students: 9 percent of parents indicated that their child liked the teacher; 95 percent sai the teacher was helpful; and 92 percent said their child was making progre in school.

One of the questions on the survey addressed the procedures used by parent to select an appropriate program and school for their child. One of the stipu lations in the settlement agreement between LEP students and the Seattl School District was that stronger efforts be made to communicate progran options to parents. Seventy-three percent of parents responded on the surve that the Parent Information Center clearly explained the various options avai able to them in the school, as well as the program selection process.

Staff Survey

Surveys were returned from 34 teachers certified to work with LEP students, 60 certified general education teachers, 2 classified bilingual staff, 2 administrators, and 2 who indicated their position was something else. Eighty-five of the respondents (87 percent) indicated that they worked at a school with a program for LEP students. Respondents agreed that there was good communication between staff certified to work with LEP students and other staff (93 percent), and they believed support was available from staff certified to work with LEP students when needed (93 percent agreement). Only 61 percent agreed, however, that concerns surrounding issues of programs for LEP students were heard by the district.

Sixty-five percent agreed that class size was appropriate for the placement of LEP students, and 85 percent agreed that new students should go to one of the five Bilingual Orientation Centers. Only 23 percent thought that new students should go into the general education classroom with ESL support. Overall, staff favored an expansion of the programs for LEP students, although this response was related to the type of program in which they worked. The staff indicated they would like to see an expansion of the number of Bilingual Orientation Center sites (65 percent agreement) and an increase in the number of schools with programs for LEP students (69 percent agreement). However, in relation to increasing the number of Bilingual Orientation Centers, 90 percent of teachers certified to work with LEP students thought this increase was appropriate, whereas only 52 percent of the general education teachers thought so.

SUMMARY

The following conclusions can be drawn regarding the programs for LEP students in the Seattle School District:

- Contrary to the received wisdom promoted by advocates for bilingual education programs, Seattle's implementation of an English immersion program with a minimum of native language support has resulted in impressive results for the district's 6,000 LEP students.
- Students enrolled in programs for LEP students are making significant achievement gains compared to the district average. These gains appear to be directly attributable to participation in these programs. Students make the most rapid gains when they participate in programs for LEP students for up to, but not beyond, five years. For students who have been in programs for LEP students longer than five years, the gains seem to diminish considerably.
- Students who have successfully exited from programs for LEP students are achieving at rates that are comparable to district averages. This find-

ing is true for all major subject areas, including reading, language, and mathematics.

- The dropout rate for students in programs for LEP students is considerably lower than district averages.
- The graduation rate for students *in* programs for LEP students is considerably lower than district averages. However, students who have successfully *exited* from programs for LEP students have high school graduation rates that are on a par with other students in the district.
- Overall, the perception of students, parents, and staff is that the programs for LEP students have had a positive influence on the educational experiences of LEP students.

Therefore, if the special features of the Seattle program for LEP students were utilized by other school districts across the country, one could reasonably expect similarly successful results.

REFERENCES

Adams, M.J. (1990). *Beginning to read: Thinking and learning about print.* Cambridge, MA: MIT Press.

Alva, S.A., and Padilla, A.M. (1995). Academic invulnerability among Mexican Americans: A conceptual framework. *The Journal of Educational Issues of Language Minority Students* 15: 27–47.

Arias, M.B. (1986). The context of education for Hispanic students: An overview. *American Journal of Education* 95(1): 26–57.

Barber, M.B. (1993). With schools becoming towers of Babel, California stumbles along without a state bilingual education program. *California Journal* 24: 17–18.

Casas, J.M., Furling, M.J., Solberg, V.S., and Carranza, O. (1990). An examination of individual factors associated with the academic success and failure of Mexican-American and Anglo students. In A. Barone and E. E. Garcia (Eds.), *Children at risk: Poverty, minority status, and other issues in educational equity,* (pp. 103–119). Washington DC: National Association of School Psychologists.

Chamot, A.U., and O'Malley, J.M. (1996). The cognitive approach: A model for linguistically diverse classrooms. *The Elementary School Journal* 96(3): 259–273.

Crawford, J. (1989). *Bilingual education: History, politics, theory, and practice.* Trenton, NJ: Crane.

CTB/McGraw-Hill (1985). *California Achievement Test.* Monterey, CA: Author.

Cubillos, E.M. (1988). The Bilingual Education Act: 1988 legislation. *Focus: The National Clearinghouse for Bilingual Education 7*: 1–15.

DeAvila, E.A., and Duncan, S.E. (1977). *Language Assessment Scales* (2nd ed.). Corte Madera, CA: Linguametrics Group.

Fitzgerald, J. (1995). English-as-a-second-language learners' cognitive reading processes: A review of research in the United States. *Review of Educational Research* 65: 145–190.

Foster, C. (1980). Creole in conflict. *Migration Today* 8: 8–13.

Genesee, F. (1984). *Historical and theoretical foundations of immersion education: Studies of immersion education*. Sacramento: California State Department of Education.

Gersten, R.G. (1996). The double demands of teaching English language learners. *Educational Leadership* 53(5): 18–22.

Gersten, R., and Woodward, J. (1994). The language-minority student and special education: Issues, trends, and paradoxes. *Exceptional Children* 60(4): 310–322.

Goldenberg, C., and Gallimore, R. (1991). Local knowledge, research knowledge, and educational change: A case study of early Spanish reading improvement. *Educational Researcher* 20(8): 2–14.

Jiménez, R.T., García, G.E., and Pearson, P.D. (1995). Three children, two languages, and strategic reading: Case studies of bilingual and monolingual readers. *American Educational Research Journal* 32(1): 67–97.

Jiménez, R.T., García, G.E., and Pearson, P.D. (1996). The reading strategies of bilingual Latina/o students who are successful English readers: Opportunities and obstacles. *Reading Research Quarterly* 31(1): 90–112.

Kleinman, H.H., and Daniel, J.P. (1981). Indochinese resettlement: Language education and social services. *International Migration Review* 15: 239–244.

Lambert, W.E., and Tucker, G.R. (1972). *Bilingual education of children: The St. Lambert experiment*. Rowley, MA: Newbury House.

Litzenberger, J., and Sanders, G. (1995). *Research report: Seattle School District: An evaluation of the transitional bilingual education program*. Seattle, WA: Puget Sound Educational Service District, Research & Development Center.

Moll, L.C., and Diaz, S. (1986). Change as the goal of educational research. *Anthropology and Education Quarterly* 18: 300–311.

Mujica, B. (1995). Findings of the New York City longitudinal study: Hard evidence on bilingual and ESL programs. *READ Perspectives* II-2: 7–32.

Northcutt, L., and Watson, D. (1986). *Sheltered English teaching handbook*. Carlsbad, CA: Northcutt, Watson, Gonzalez.

Porter, R.P. (1995). A review of the U.S. General Accounting Office study on limited English students. *READ Perspectives* II-1: 9–21.

Reddy, M. (Ed.). (1993). *Statistical record of Hispanic Americans*. Detroit, MI: Gale Research, Inc.

Rossell, C.H., and Baker, K. (1996). *Bilingual education in Massachusetts: The emperor has no clothes*. Boston, MA: Pioneer Institute for Public Policy Research.

Rumberger, R. (1983). Dropping out of high school: The influence of race, sex, and family background. *American Educational Research Journal* 202: 199–220.

Rumberger, R.W. (1995). Dropping out of middle school: A multilevel analysis of students and schools. *American Educational Research Journal* 32(3): 583–626.

Salvia, J., and Ysseldyke, J.E. (1988). *Assessment in special and remedial education* (4th ed.). Boston: Houghton-Mifflin.

Stewner-Manzanares, G. (1988). The Bilingual Education Act: Twenty years later. *Focus: The National Clearing House for Bilingual Education* 6: 1–8.

Teale, W.H. (1986). Home background and young children's literacy development. In W.H. Teale and E. Sulzby (Eds.), *Emergent literacy*, (pp. 173–206). Norwood, NJ: Ablex Publishing Corporation.

U.S. Bureau of the Census (1992). *Population projections of the United States, by age, sex, race, and Hispanic origin: 1992 to 2050* (No. P25-1092). U.S. Government Printing Office, Washington, DC.

Wong-Fillmore, L., and Valdez, C. (1986). Teaching bilingual learners. In M.C. Wittrock (Ed.), *Handbook of research on teaching*,(pp. 648–685). New York: Macmillan.

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About the Authors

SCOTT K. BAKER, Ph.D., works as a research associate at the University of Oregon, exploring issues related to alternative assessment practices with language minority students, early reading and vocabulary growth, and techniques for translating research findings into classroom practice. Dr. Baker is also currently involved in a project funded by the U.S. Department of Education to synthesize the research on effective instructional practices for language minority students with special needs.

BARRY R. CHISWICK, Ph.D., Columbia University, is Research Professor and Head of the Department of Economics at the University of Illinois at Chicago. He has gained an international reputation for his pioneering research on the economics of immigration, racial and ethnic minorities, and language. He is a former Senior Staff Economist of the Council of Economic Advisors, has testified before Congress, and is frequently interviewed by the print and electronic media.

PAUL W. MILLER, Ph.D., Australian National University, is an Associate Professor and Head of the Department of Economics at the University of Australia, Perth; he has also held teaching and research posts in Canada and in the UK. His research interests include the economics of discrimination, trade unions, and immigrant adjustment.

ROSALIE PEDALINO PORTER, Ed.D., is chairman of the Board and acting director of The READ Institute. For ten years she was director of Bilingual and English as a Second Language Programs in the Newton, Massachusetts, Public Schools. She has lectured widely on the subject of education policy for language minority children in the United States, Europe, and Asia.

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